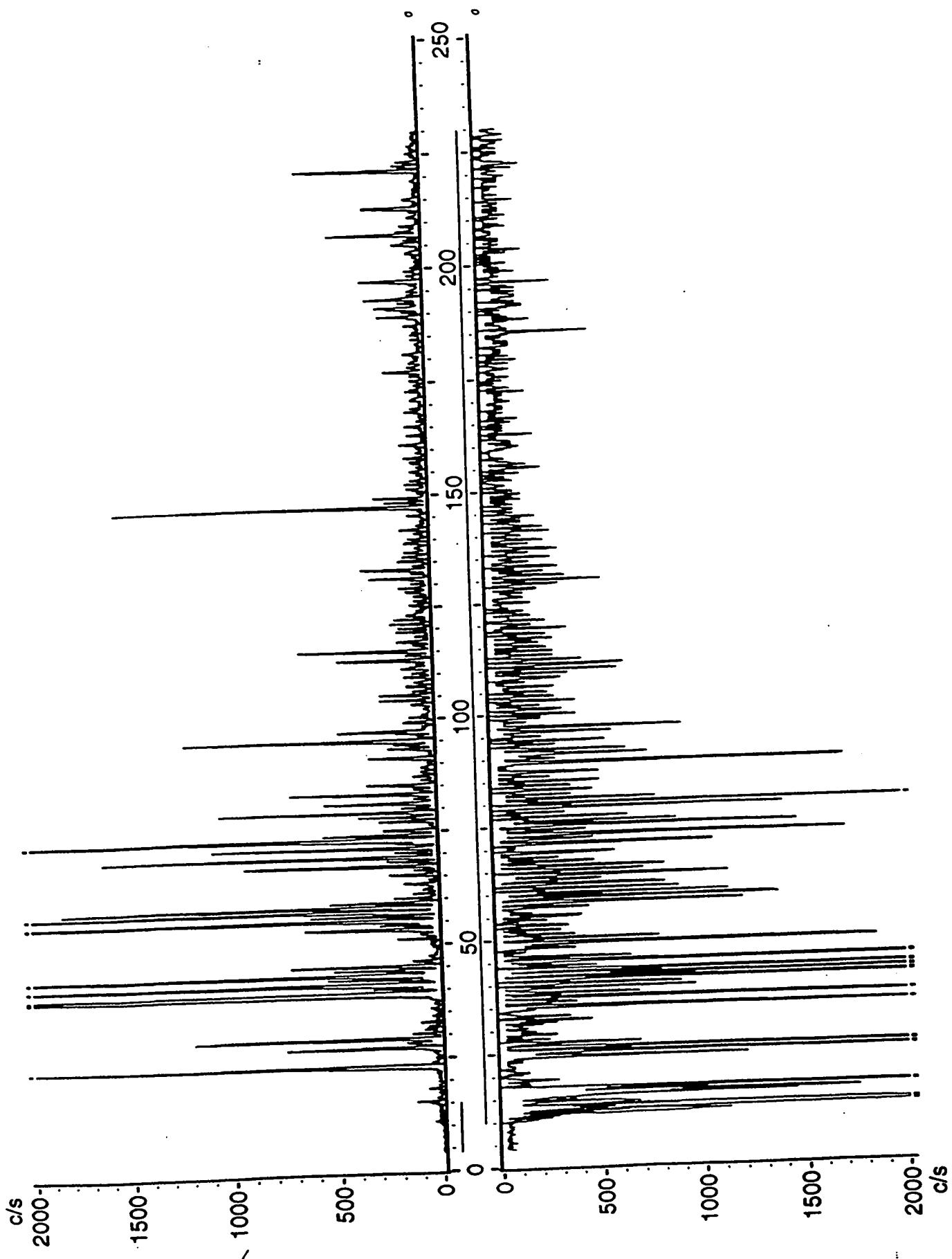
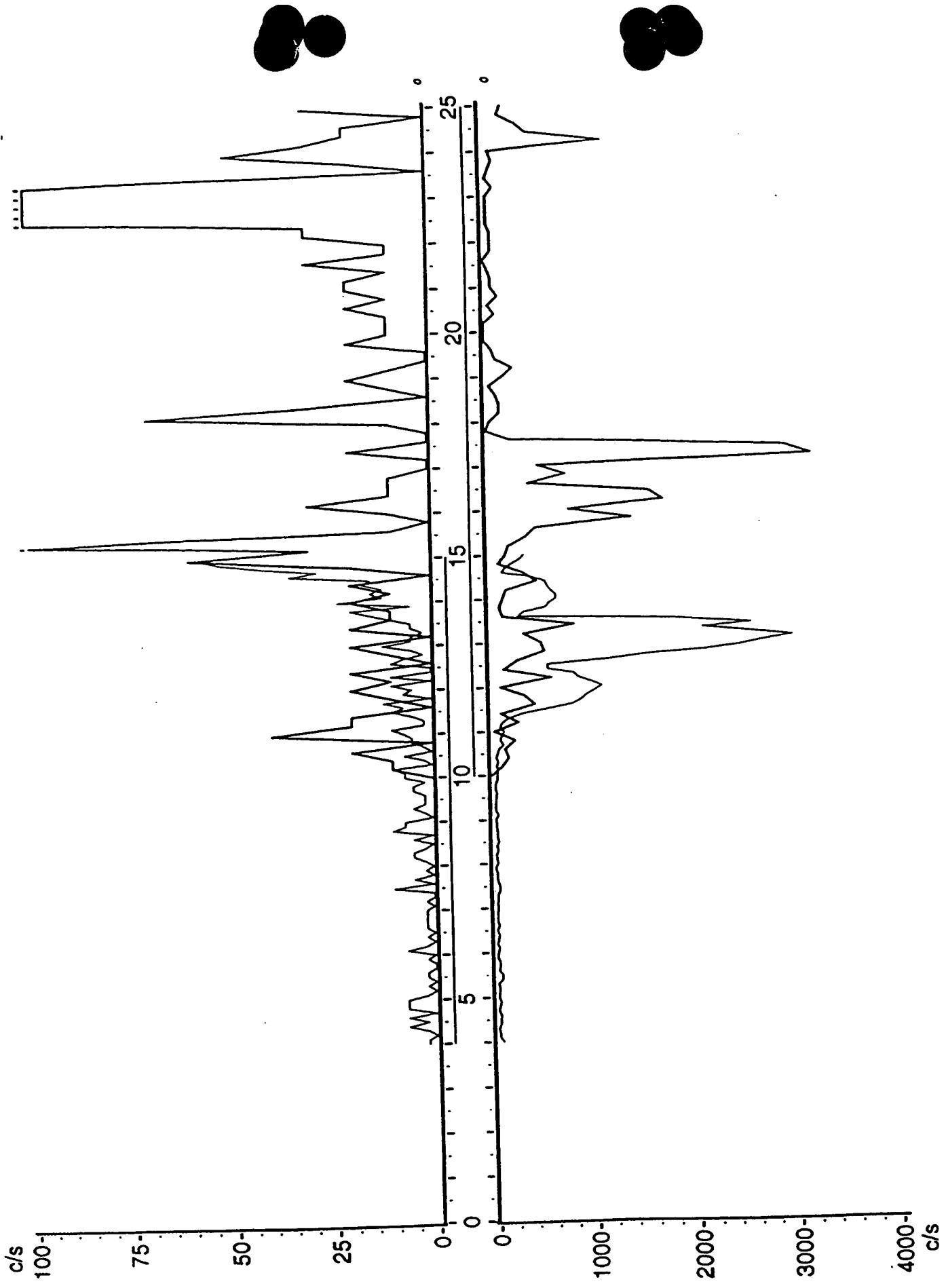


**Jacox, M. G., Watts, K. D., "INEL XPS Report", Idaho
National Engineering Laboratory, EG&G Idaho, Inc.,
Idaho Falls, Idaho, 83415, November 1993**

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All Data Displayed (No Peak Picking)





All Data Unsorted (No Peak Matching)
Wag - November 18, 1993

08:47:30 11/18/1993 08:47:38 Record: 1 C:\MASSDEMO\DATA\111893A.DAT

08:47:30 11/18/1993 08:47:38 Record: 1 C:\MASSDEMO\DATA\111893B.DAT

08:47:30 11/18/1993 08:47:38 Record: 1 C:\MASSDEMO\DATA\111893A.DAT

Cursor

1445

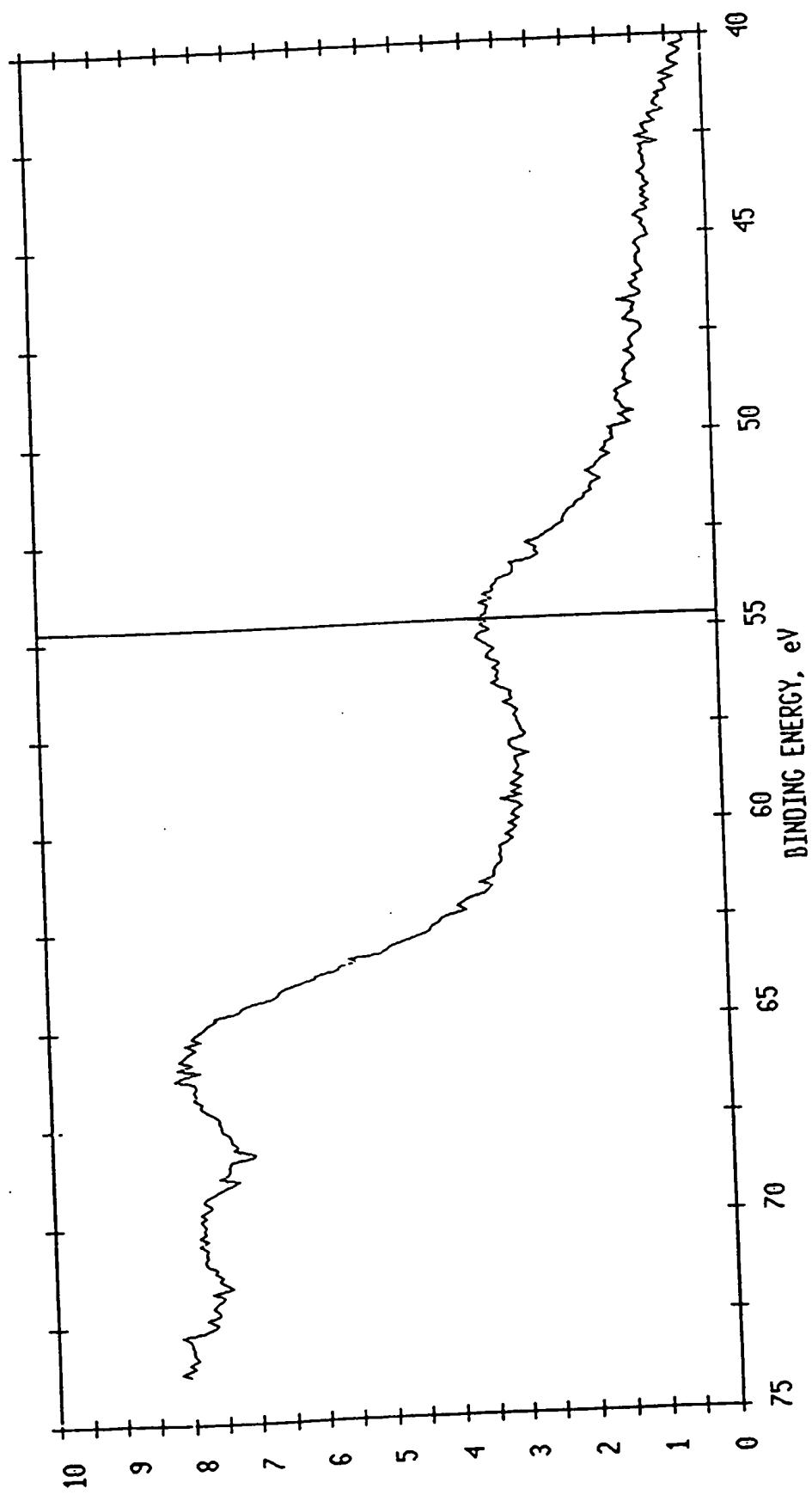
28173 Counts/Sec

Counts

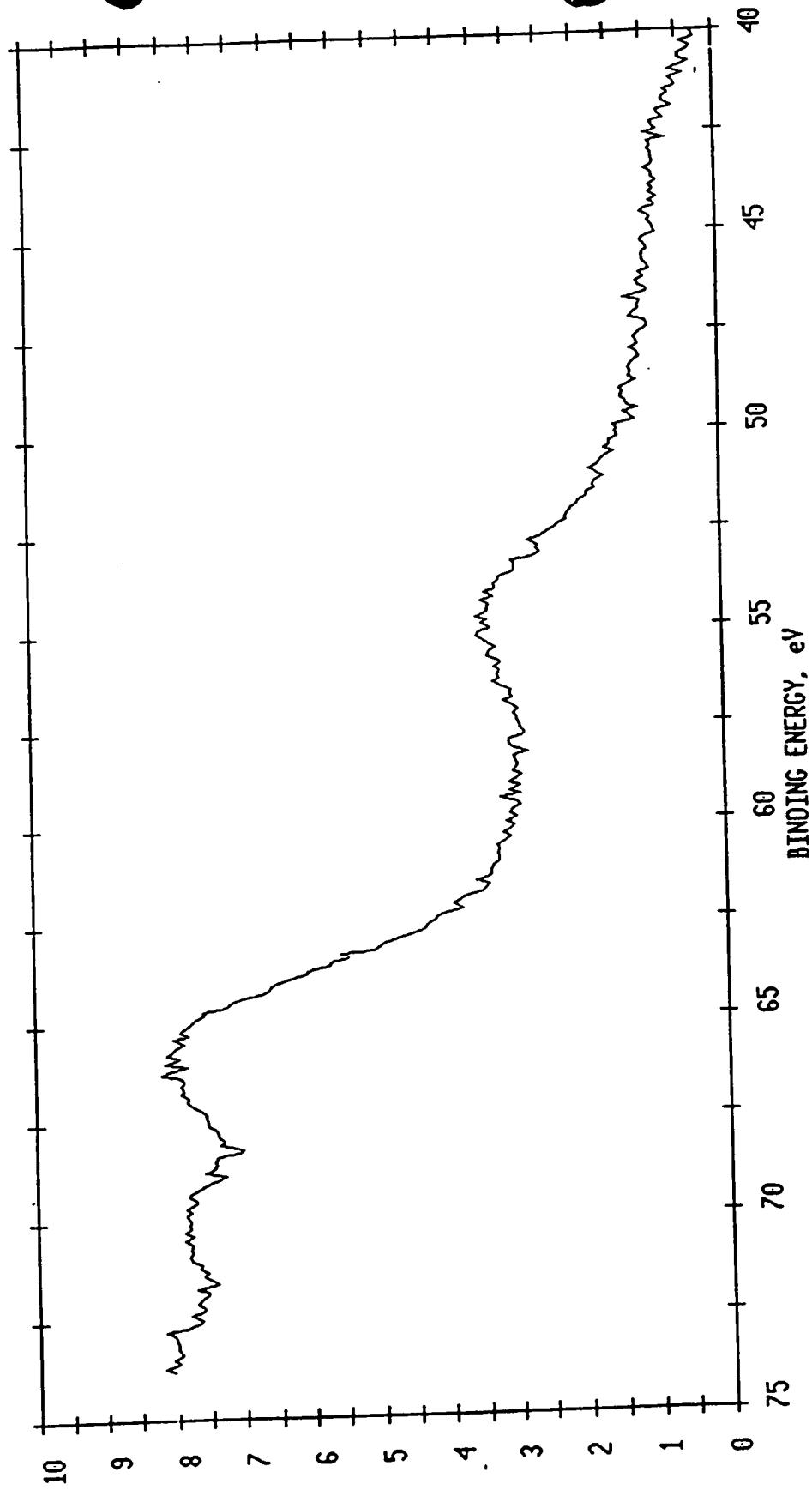
54.700

3 Energy (ev)

N(E)/E. sat. Shf

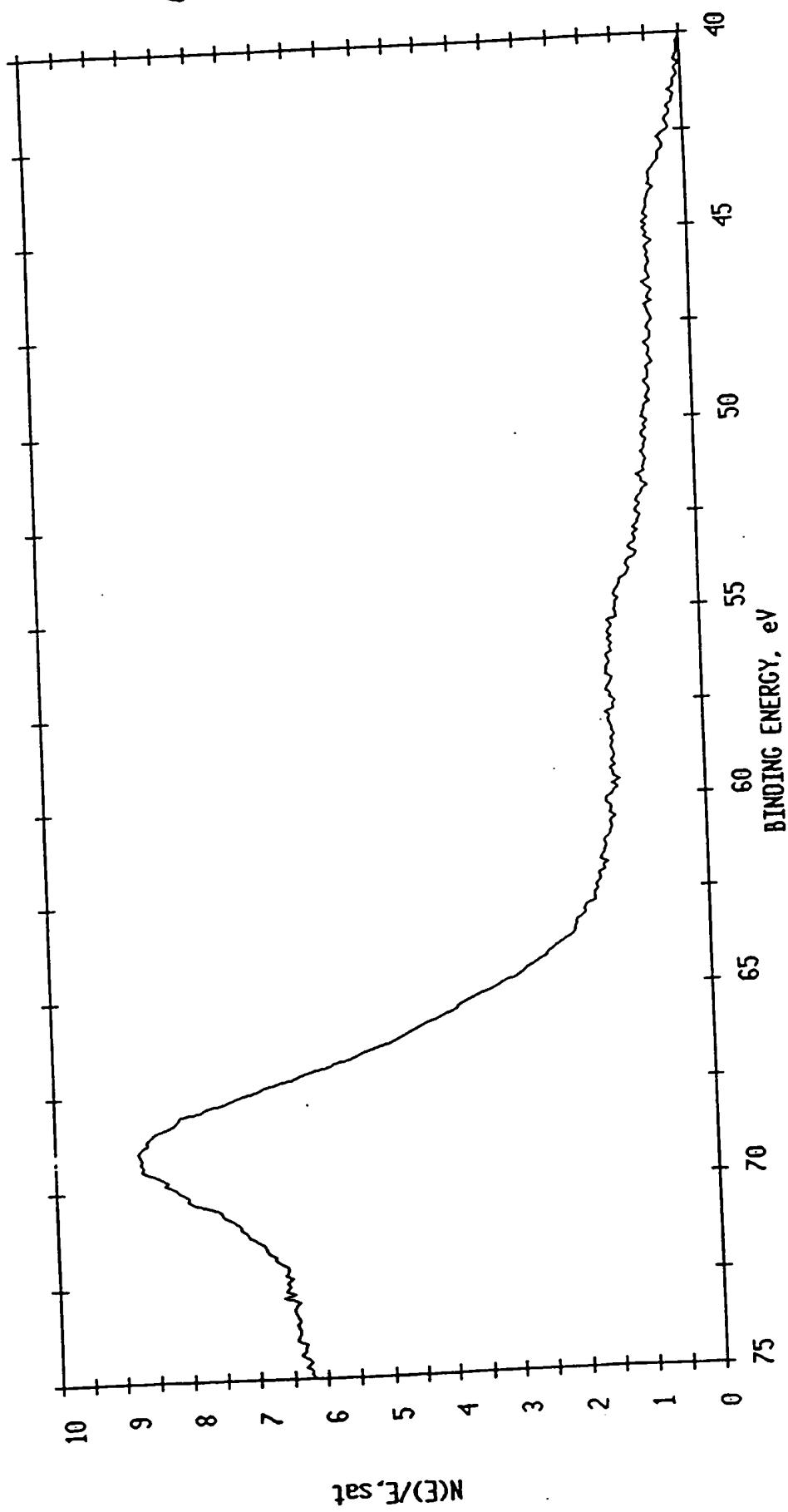


ESCA MULTIPLEX 11/24/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=114.08 min
FILE: Nitest50 Ni wire treated overnight at IRC.
SCALE FACTOR= 0.116 k c/s, OFFSET= 1.036 k c/s PASS ENERGY=143.050 eV Al 400 μ

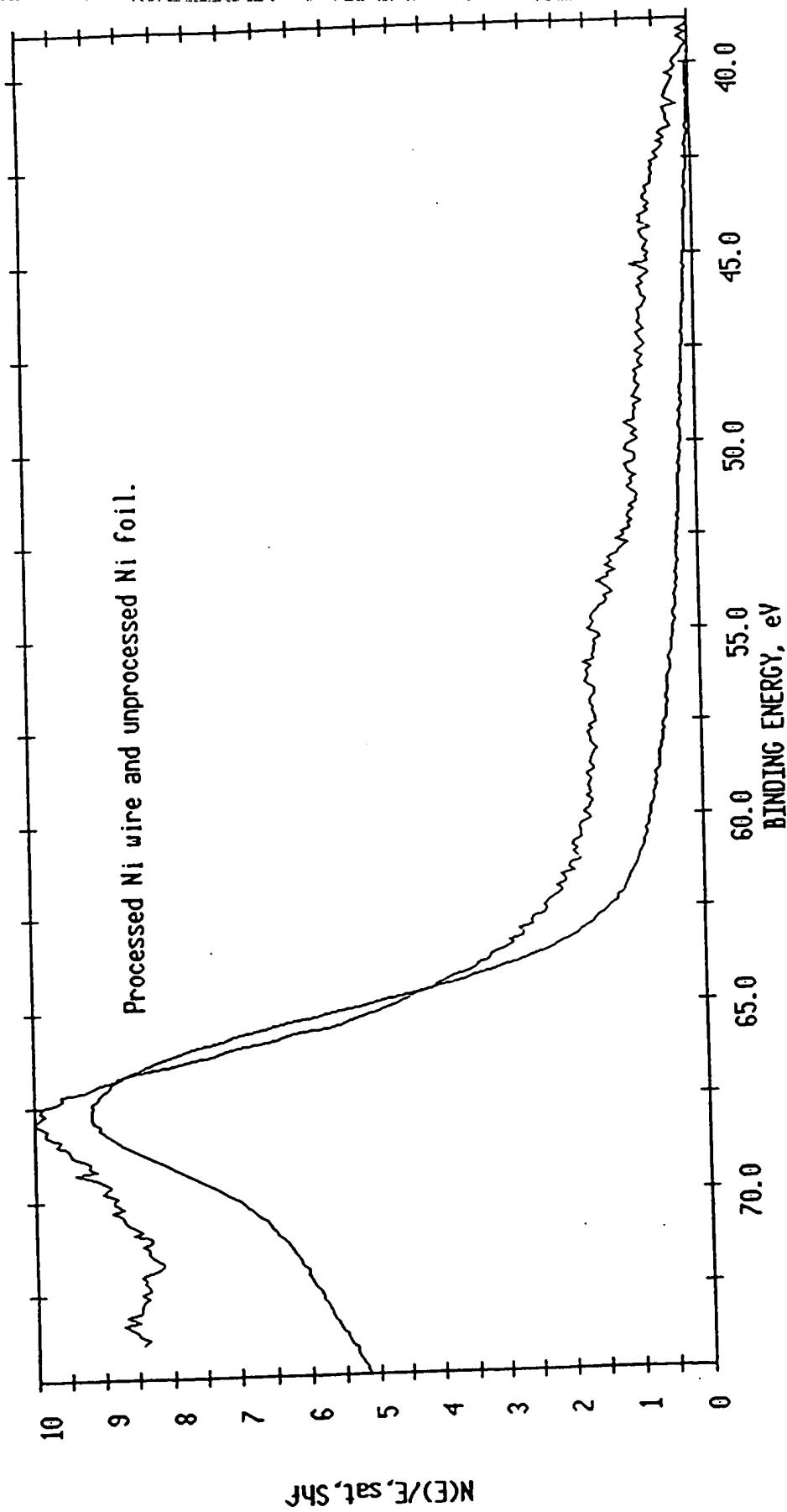


N(E)/E, sat, shf

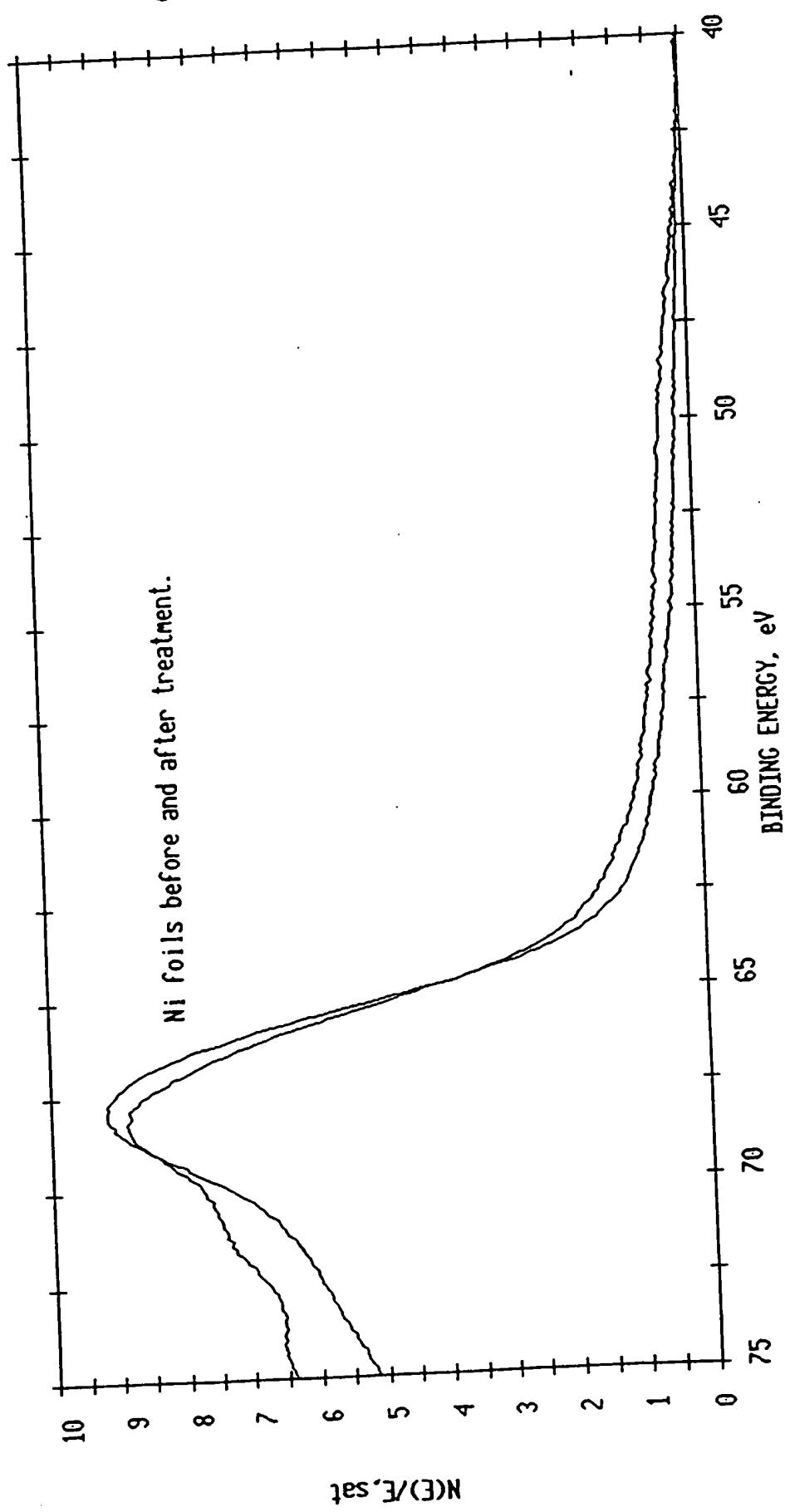
ESCA MULTIPLEX 11/22/93 EL= REG 2 ANGLE= 15 deg ACO TIME=96.53 min
FILE: Nitest32 2nd Ni wire treated prior to IRC.
SCALE FACTOR= 0.274 k c/s, OFFSET= 1.580 k c/s PASS ENERGY=143.050 eV A1 400 W



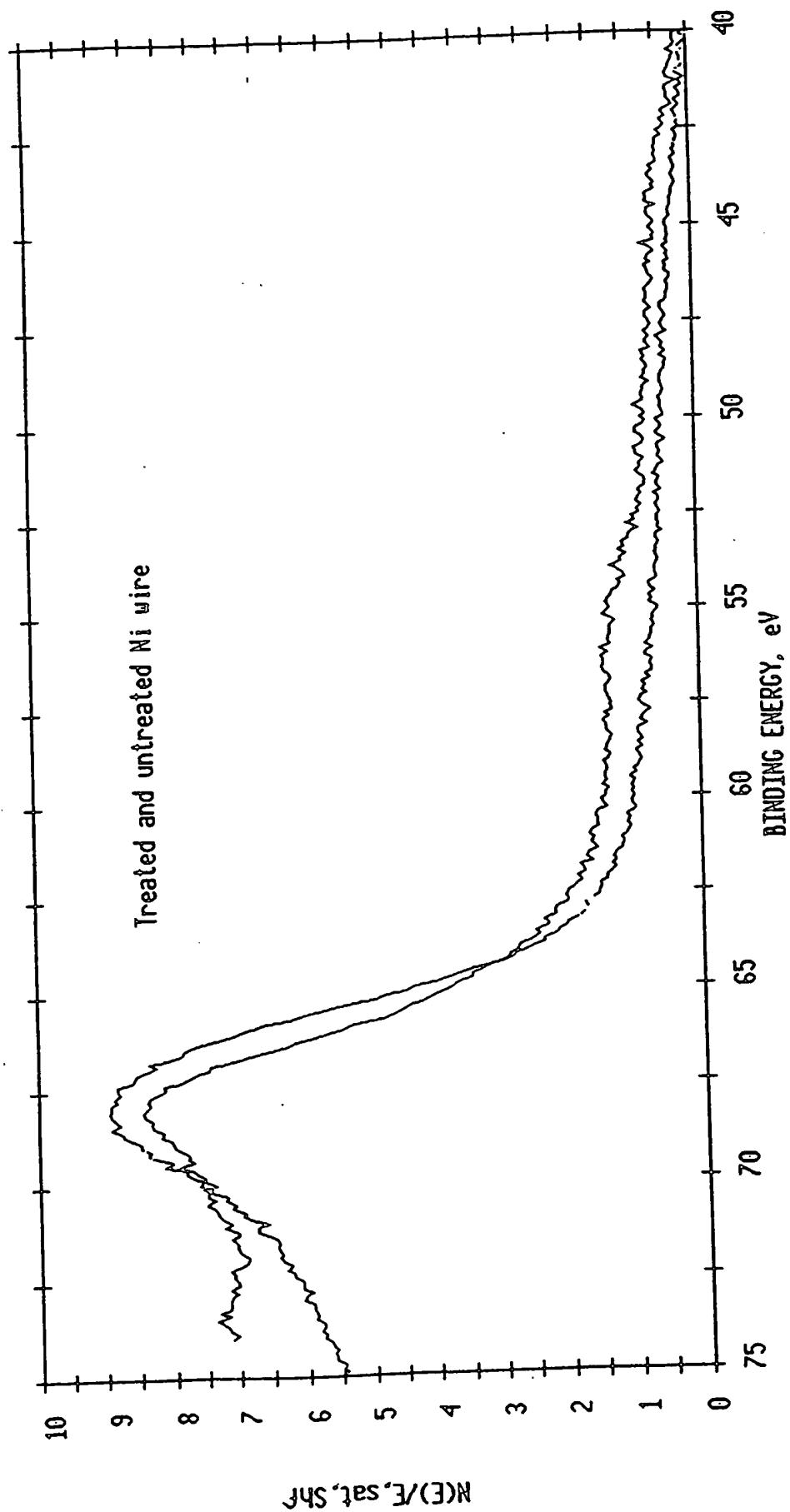
ESCA MULTIPLEX 11/18/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=76.05 min
FILE: Nitest22 Ni foil untreated. as received.
SCALE FACTOR= 3.401 k c/s, OFFSET= 9.545 k c/s PASS ENERGY=143.050 eV Al 400 W



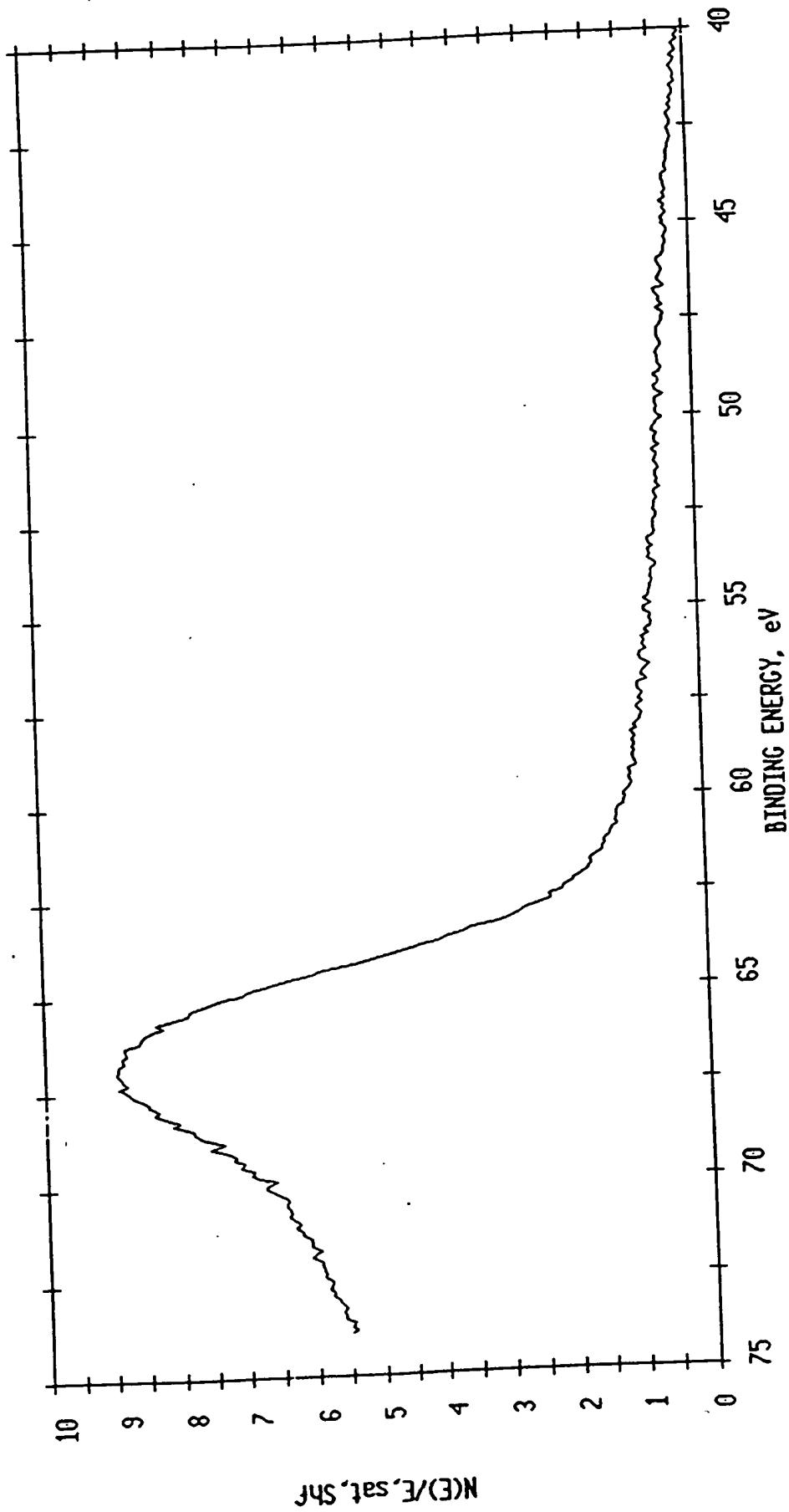
ESCA MULTIPLEX 11/19/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=84.83 min
FILE: Nitest25 Ni foil treated in lab for 24 hr. As received.
SCALE FACTOR= 1.920 k c/s, OFFSET= 8.515 k c/s PASS ENERGY=143.050 eV Al 400 W

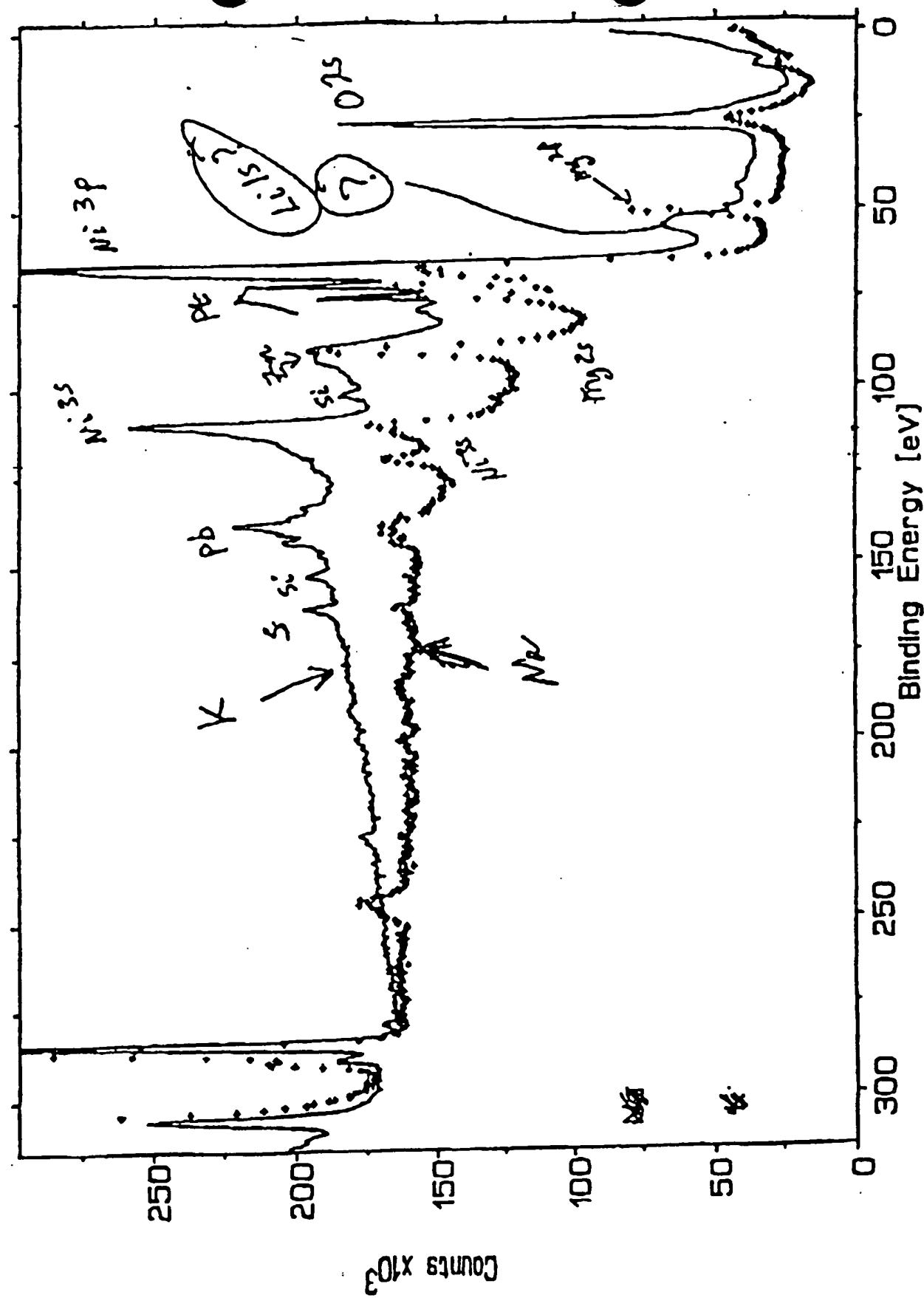


ESCA MULTIPLEX 11/18/93 EL= REC 2 ANGLE= 15 deg ACQ TIME=67.28 min
FILE: Ni test20 Ni wire processed in lab. as received.
SCALE FACTOR= 0.331 k c/s. OFFSET= 2.436 k c/s PASS ENERGY=143.050 eV Al 400 \AA



ESCA MULTIPLEX 11/19/93 EL= REG 2 ANGLE= 15 deg ACO TIME=61.43 min
FILE: Nitest27 Ni wire untreated (base line) using Al X-Ray's.
SCALE FACTOR= 0.326 k c/s, OFFSET= 1.491 k c/s PASS ENERGY=143.050 eV Al 400 W





Several examples of different energy holes effecting shrinkage and the corresponding effective nuclear charges, total energy released, and final radii of the orbitspheres going from infinity to the final radius, $a_0/(m + 1)$ are given in Table 20.1.

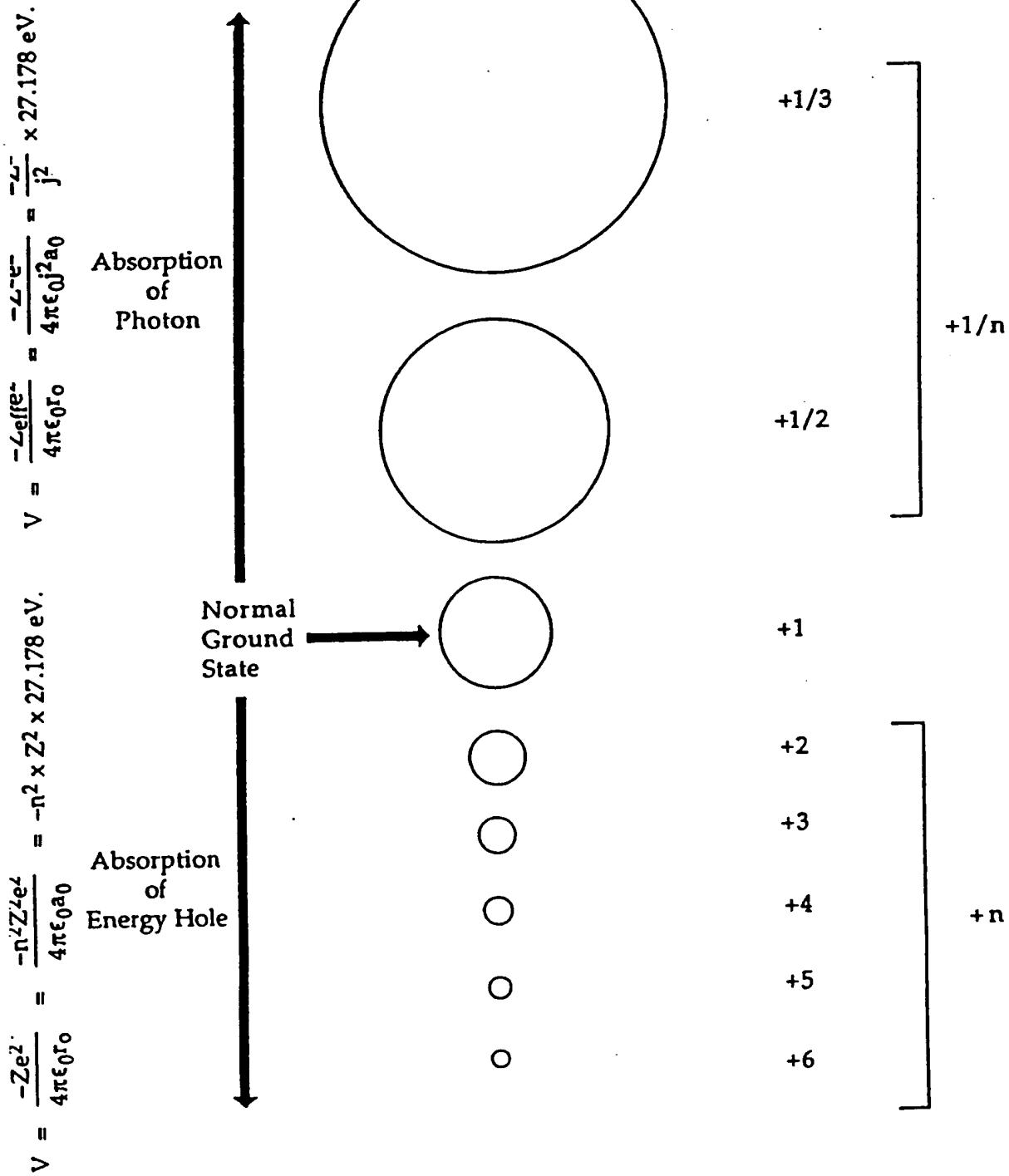
Table 20.1. Radii, energies, energy holes, and energy released for several states of hydrogen or deuterium.

n	R	V(eV)	T(eV)	Z _{eff}	energy hole (eV)	total energy released (eV) $r = \infty$ to $r = R$
-	a_0	-27.2	13.6	1	-	13.6
1	$a_0/2$	-108.8	54.4	2	27.2	54.4
2	$a_0/3$	-244.9	122.4	3	54.4	122.4
3	$a_0/4$	-435.4	217.7	4	81.6	217.7
4	$a_0/5$	-680.2	340.1	5	108.8	340.1
5	$a_0/6$	-979.6	489.6	6	136.1	489.6
6	$a_0/7$	-1333.3	666.4	7	163.3	666.4
7	$a_0/8$	-1741.4	870.4	8	190.5	870.4
8	$a_0/9$	-2204.0	1101.6	9	217.7	1101.6
9	$a_0/10$	-2721.0	1360.5	10	244.9	1360.5

Energy released for any transition is given by $\Delta E_{\text{final}} (\infty \text{ to } R) - \Delta E_{\text{initial}} (\infty \text{ to } R)$

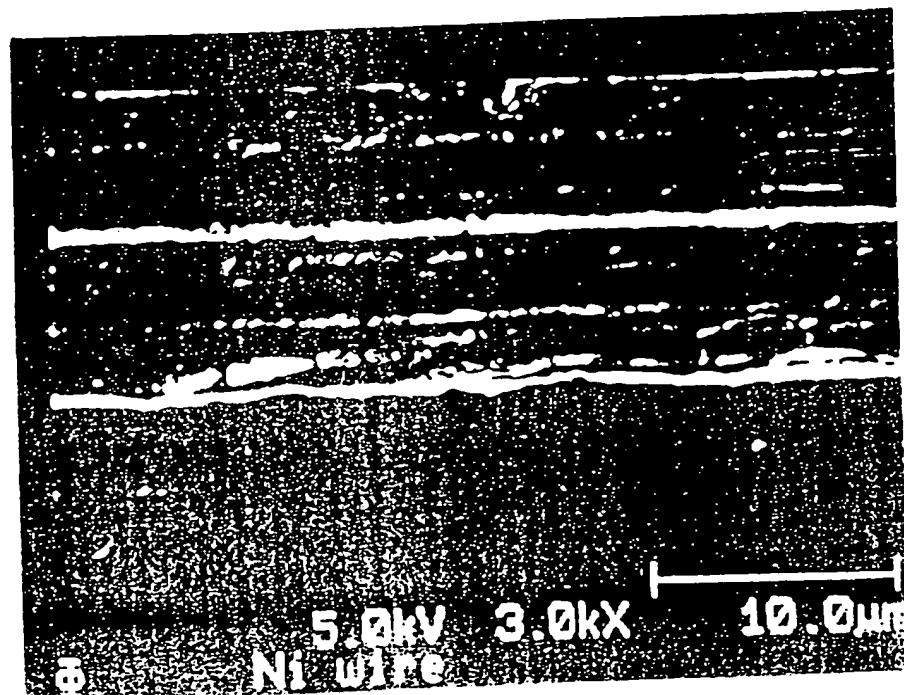
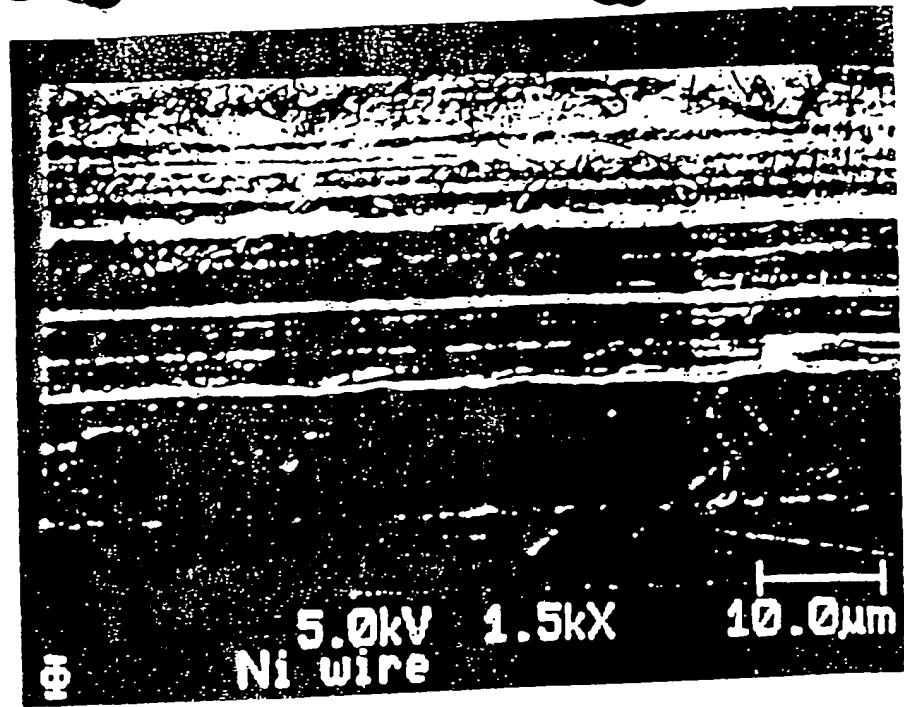
The size of the electron orbitsphere as a function of potential energy is given in Figure 20.2.

Figure 20.2. Quantized sizes and energies of hydrogen atoms.



CAF
The electric force, where r_n is the separation between the nuclei. Thus smaller electric force for deuterium separation for example muon to electron separation internuclear process is of order of n^2 or 27.21 eV , separation process is possible.

Hydrogen ground state proton. In photons

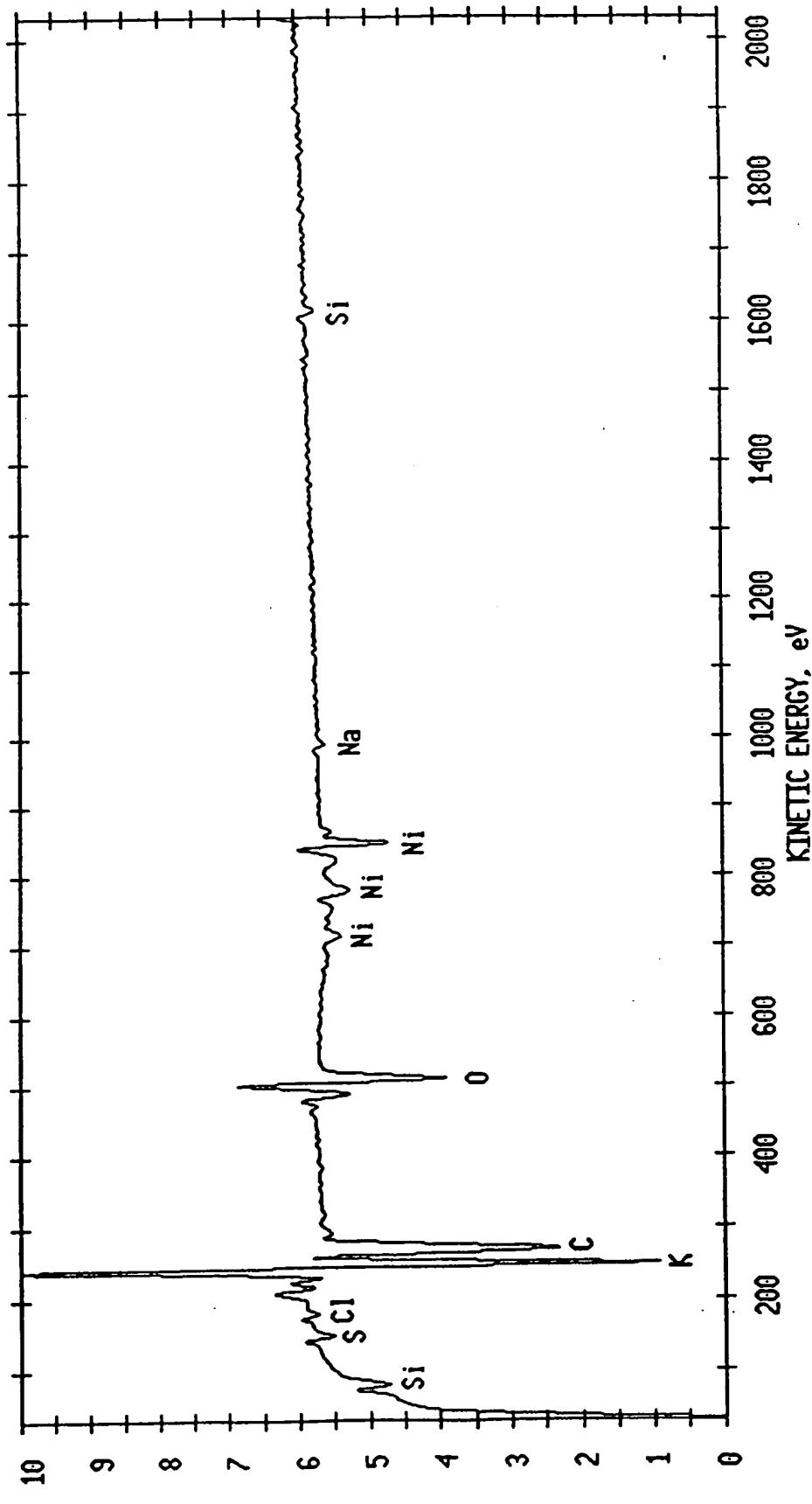


AES SURVEY V/F 11/29/93 AREA 1 ACQ TIME=13.34 MIN.

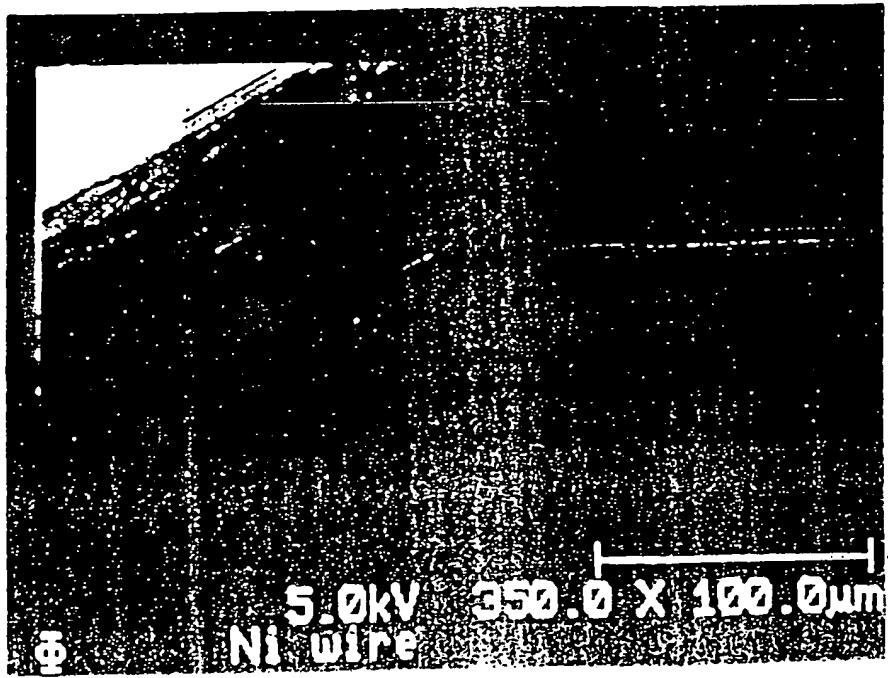
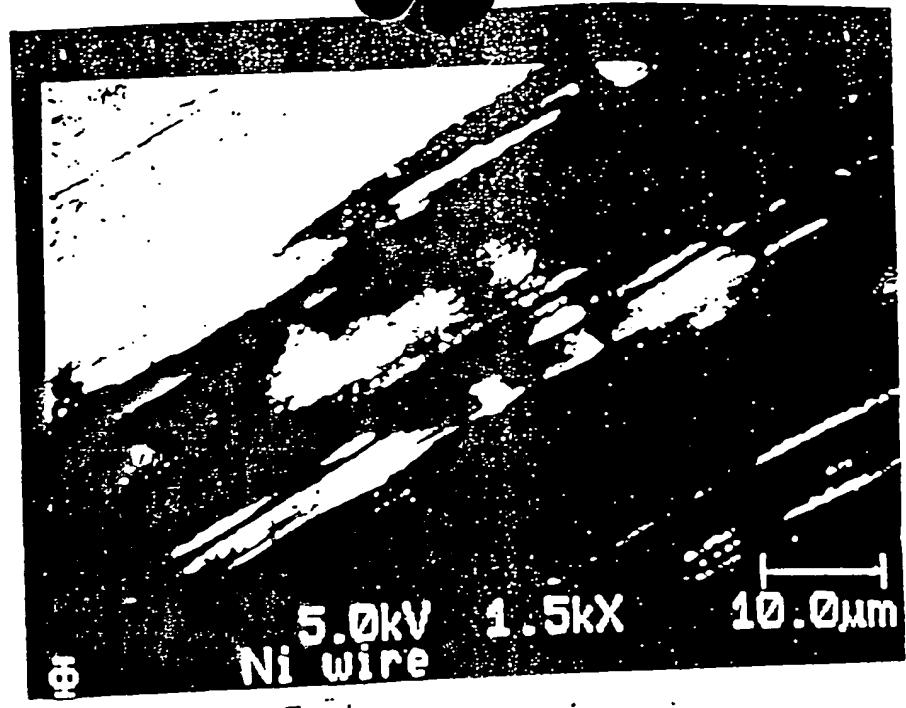
FILE: Nitest104 Ni wire treated for 24 Hr at the IRC.

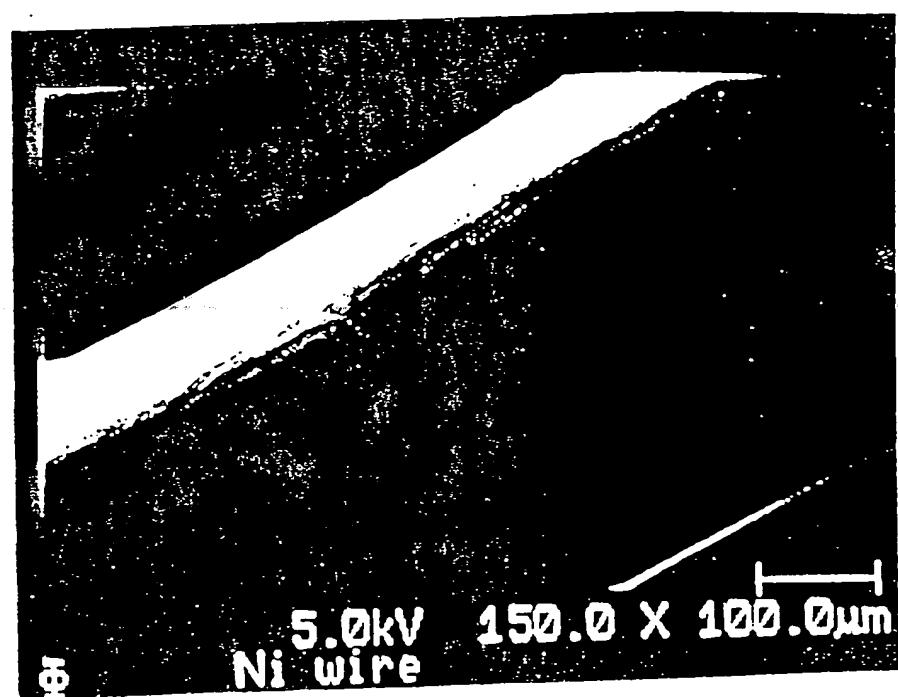
SCALE FACTOR= 47.398 k c/s, OFFSET= 118.853 k c/s

BV=5.00kV BI=0.2793uA



N(E)*E, diff, small



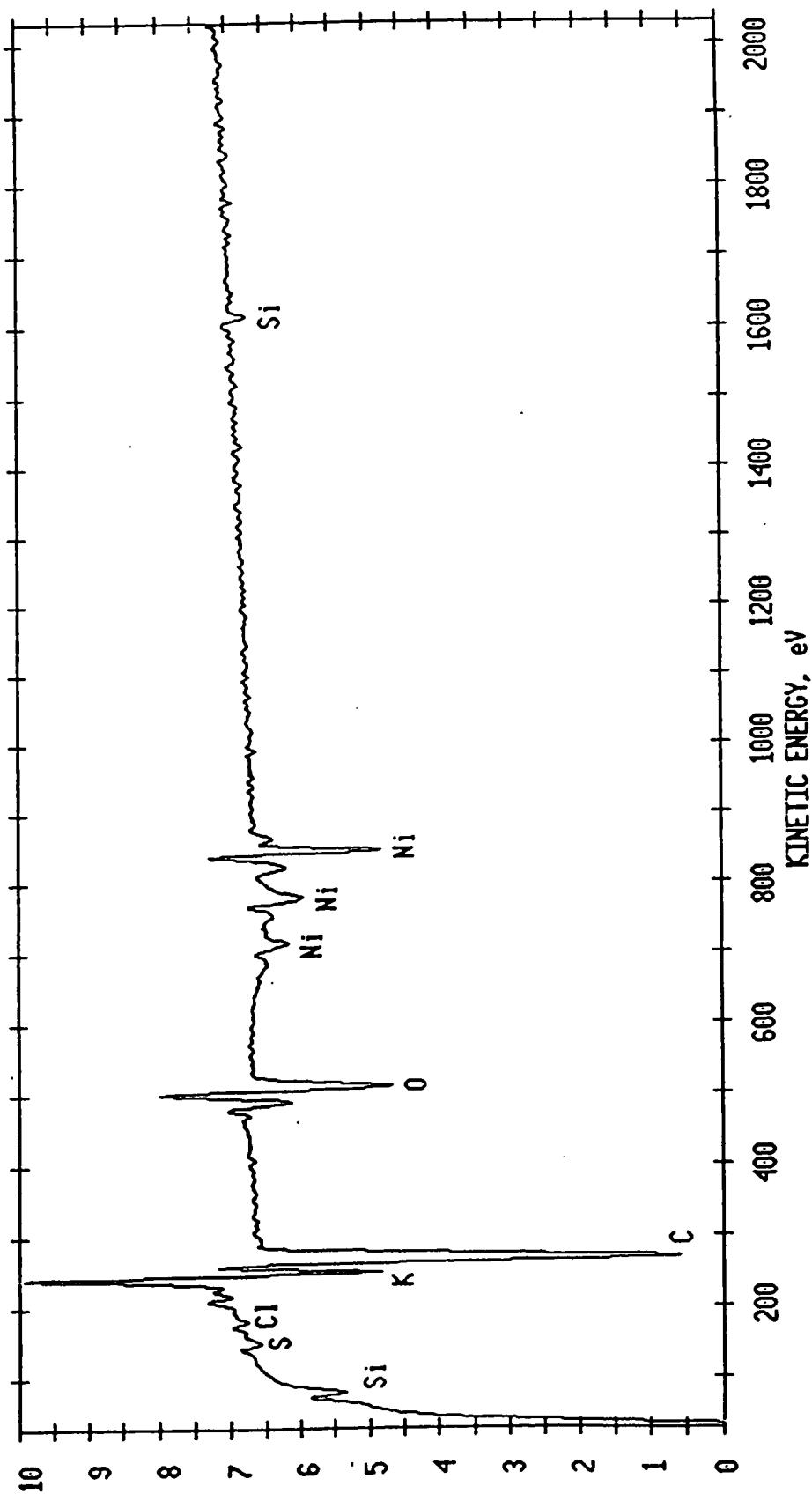


AES SURVEY V/F 11/29/93 AREA 1 ACQ TIME=6.67 MIN.

FILE: Nitest103 Ni wire treated for 24 Hr at the IRC.

SCALE FACTOR= 35.917 K c/s, OFFSET= 331.575 K c/s

BV=5.00kV BI=0.2793uA



NET, DIFF, SMALL

30-Nov-1993 09:39:41

Ni-AR-1

Raster

Accelerating voltage 20.0 KeV
Beam - sample incidence angle 90.0 degrees
Xray emergence angle 35.0 degrees
Xray - window incidence angle 0.0 degrees

STANDARDLESS EDS ANALYSIS
(ZAF CORRECTIONS VIA MAGIC V)

ELEMENT & LINE	WEIGHT PERCENT	ATOMIC PERCENT*	PRECISION 2 SIGMA	K-RATIO**
Al KA	1.89	4.00	0.03	0.0059
Si KA	0.69	1.41	0.07	0.0029
Mn KA	0.08	0.08	0.02	0.0009
Fe KA	0.10	0.10	0.02	0.0013
Ni KA	97.24	94.41	0.42	0.9699
TOTAL	100.00			

ITERATIONS 6

*NOTE: ATOMIC PERCENT is normalized to 100

**NOTE: K-RATIO = K-RATIO x R
where R = reference(standard)/reference(sample)

NORMALIZATION FACTOR: 1.000

30-Nov-1993 09:41:17

Ni-AR-2

Spot

Accelerating voltage	20.0 KeV
Beam - sample incidence angle	90.0 degrees
Xray emergence angle	35.0 degrees
Xray - window incidence angle	0.0 degrees

STANDARDLESS EDS ANALYSIS
(ZAF CORRECTIONS VIA MAGIC V)

ELEMENT & LINE	WEIGHT PERCENT	ATOMIC PERCENT*	PRECISION 2 SIGMA	K-RATIO**
Al KA	2.22	4.66	0.10	0.0070
Si KA	0.80	1.62	0.07	0.0034
Mn KA	0.05	0.05	0.02	0.0006
Fe KA	0.05	0.05	0.02	0.0007
Ni KA	96.88	93.61	0.45	0.9660
TOTAL	100.00			

ITERATIONS 6

*NOTE: ATOMIC PERCENT is normalized to 100

**NOTE: K-RATIO = K-RATIO x R
where R = reference(standard)/reference(sample)

NORMALIZATION FACTOR: 1.000

30-Nov-1993 09:47:39

Ni-AR-4

Raster

Accelerating voltage 20.0 KeV
Beam - sample incidence angle 90.0 degrees
Xray emergence angle 35.0 degrees
Xray - window incidence angle 0.0 degrees

STANDARDLESS EDS ANALYSIS
(ZAF CORRECTIONS VIA MAGIC V)

ELEMENT & LINE	WEIGHT PERCENT	ATOMIC PERCENT*	PRECISION 2 SIGMA	K-RATIO**
Al KA	4.11	8.52	0.10	0.0130
Mn KA	0.09	0.09	0.02	0.0011
Fe KA	0.07	0.07	0.02	0.0010
Ni KA	95.73	91.31	0.39	0.9535
TOTAL	100.00			

ITERATIONS 7

*NOTE: ATOMIC PERCENT is normalized to 100

**NOTE: K-RATIO = K-RATIO x R
where R = reference(standard)/reference(sample)

NORMALIZATION FACTOR: 1.000

30-Nov-1993 09:42:46

Ni-AR-3

Sp. +

Accelerating voltage	20.0 KeV
Beam - sample incidence angle	90.0 degrees
Xray emergence angle	35.0 degrees
Xray - window incidence angle	0.0 degrees

STANDARDLESS EDS ANALYSIS
(ZAF CORRECTIONS VIA MAGIC V)

ELEMENT & LINE	WEIGHT PERCENT	ATOMIC PERCENT*	PRECISION 2 SIGMA	K-RATIO**
Al KA	3.17	6.61	0.12	0.0100
Si KA	0.71	1.42	0.06	0.0030
Mn KA	0.05	0.05	0.01	0.0005
Fe KA	0.08	0.08	0.02	0.0010
Ni KA	95.99	91.85	0.44	0.9561
TOTAL	100.00			

ITERATIONS 7

*NOTE: ATOMIC PERCENT is normalized to 100

**NOTE: K-RATIO = K-RATIO x R
where R = reference (standard) / reference (sample)

NORMALIZATION FACTOR: 1.000

30-Nov-1993 09:57:31

Ni-T-2

512+

Accelerating voltage	20.0 KeV
Beam - sample incidence angle	90.0 degrees
Xray emergence angle	35.0 degrees
Xray - window incidence angle	0.0 degrees

STANDARDLESS EDS ANALYSIS
(ZAF CORRECTIONS VIA MAGIC V)

ELEMENT & LINE	WEIGHT PERCENT	ATOMIC PERCENT*	PRECISION 2 SIGMA	K-RATIO**
Al KA	3.80	7.90	0.12	0.0120
K KA	0.34	0.49	0.04	0.0029
Mn KA	0.04	0.04	0.01	0.0005
Fe KA	0.06	0.06	0.02	0.0008
Ni KA	95.75	91.50	0.43	0.9537
TOTAL	99.99			

ITERATIONS 6

*NOTE: ATOMIC PERCENT is normalized to 100

**NOTE: K-RATIO = K-RATIO x R
where R = reference(standard)/reference(sample)

NORMALIZATION FACTOR: 1.000

30-Nov-1993 09:54:39

Ni-T-1

Raster

Accelerating voltage	20.0 KeV
Beam - sample incidence angle	90.0 degrees
Xray emergence angle	35.0 degrees
Xray - window incidence angle	0.0 degrees

STANDARDLESS EDS ANALYSIS
(ZAF CORRECTIONS VIA MAGIC V)

ELEMENT & LINE	WEIGHT PERCENT	ATOMIC PERCENT*	PRECISION 2 SIGMA	K-RATIO**
Only ~1/2 - 2% probably				
Al KA	6.47	13.07	0.16	0.0208
K KA	0.35	0.48	0.04	0.0030
Mn KA	0.08	0.08	0.02	0.0009
Fe KA	0.06	0.06	0.02	0.0008
Ni KA	93.04	86.32	0.39	0.9247
TOTAL	100.00			

ITERATIONS 7

*NOTE: ATOMIC PERCENT is normalized to 100

**NOTE: K-RATIO = K-RATIO x R
where R = reference(standard)/reference(sample)

NORMALIZATION FACTOR: 1.000

30-Nov-1993 10:00:28

Ni-T-3

Spot

Accelerating voltage 20.0 KeV
 Beam - sample incidence angle 90.0 degrees
 Xray emergence angle 35.0 degrees
 Xray - window incidence angle 0.0 degrees

STANDARDLESS EDS ANALYSIS
 (ZAF CORRECTIONS VIA MAGIC V)

ELEMENT & LINE	WEIGHT PERCENT	ATOMIC PERCENT*	PRECISION 2 SIGMA	K-RATIO**
Al KA	6.00	12.18	0.17	0.0193
K KA	0.38	0.53	0.04	0.0032
Mn KA	0.08	0.08	0.02	0.0009
Fe KA	0.07	0.06	0.02	0.0009
Ni KA	93.47	87.14	0.41	0.9293
TOTAL	100.00			

ITERATIONS 7

*NOTE: ATOMIC PERCENT is normalized to 100

**NOTE: K-RATIO = K-RATIO x R
 where R = reference(standard)/reference(sample)

NORMALIZATION FACTOR: 1.000

30-Nov-1993 10:02:41

Ni-T-4

Rostov

Accelerating voltage	20.0 KeV
Beam - sample incidence angle	90.0 degrees
Xray emergence angle	35.0 degrees
Xray - window incidence angle	0.0 degrees

STANDARDLESS EDS ANALYSIS
(ZAF CORRECTIONS VIA MAGIC V)

ELEMENT & LINE	WEIGHT PERCENT	ATOMIC PERCENT*	PRECISION 2 SIGMA	K-RATIO**
Al KA	1.46	3.12	0.09	0.0045
K KA	0.25	0.36	0.03	0.0021
Mn KA	0.09	0.09	0.02	0.0010
Fe KA	0.09	0.09	0.02	0.0012
Ni KA	98.11	96.33	0.42	0.9795
TOTAL	100.00			

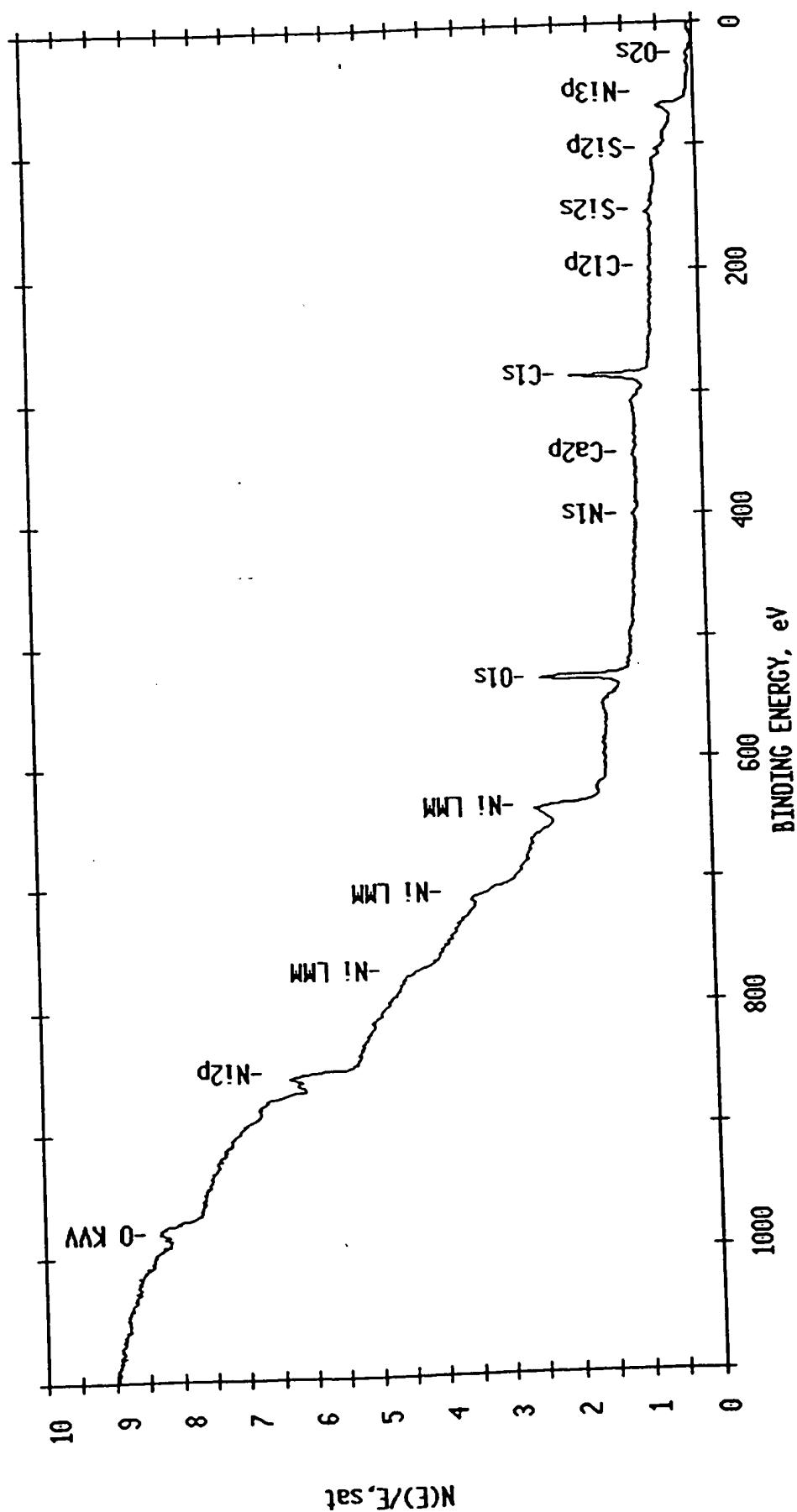
ITERATIONS 6

*NOTE: ATOMIC PERCENT is normalized to 100

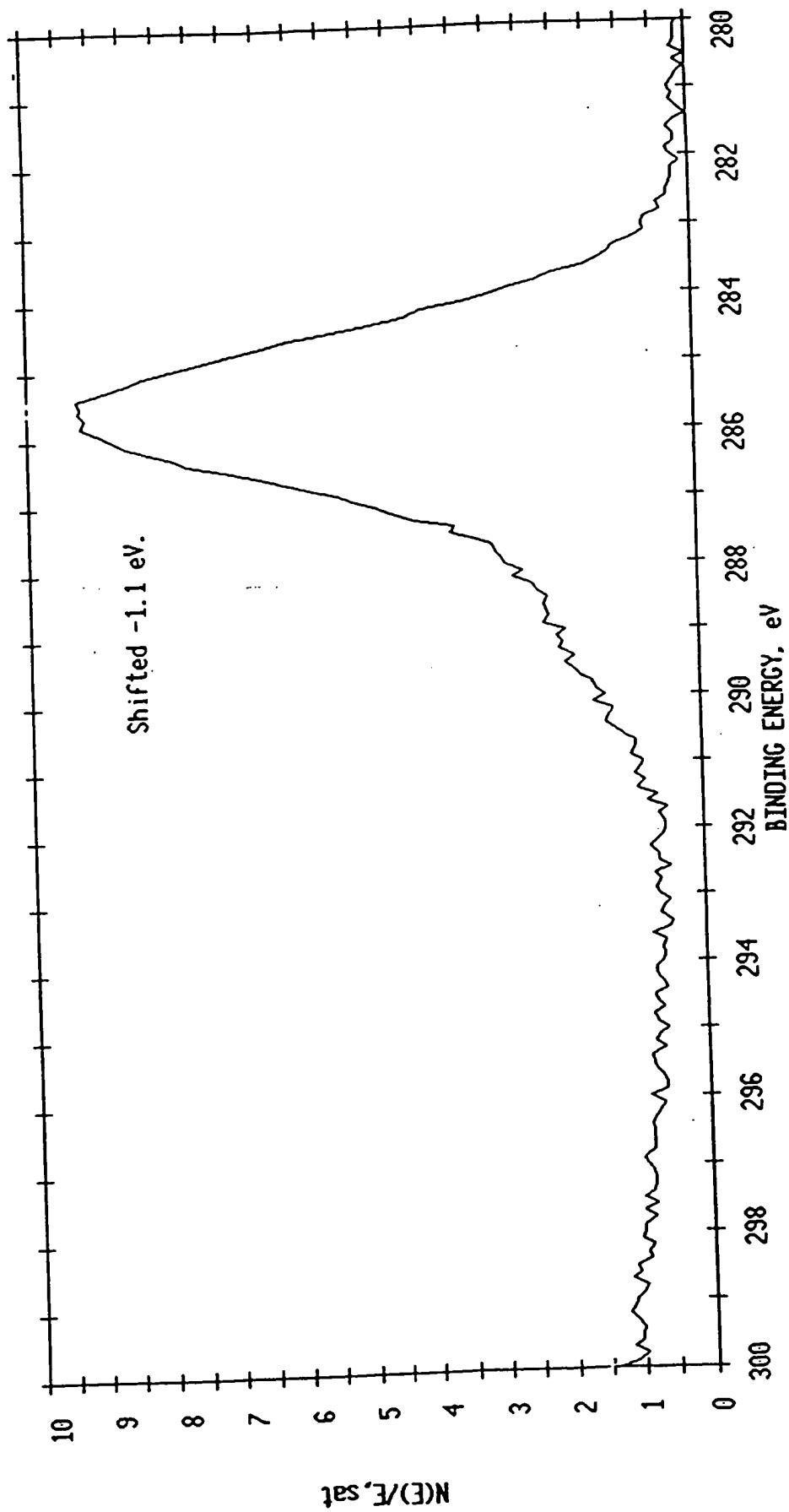
**NOTE: K-RATIO = K-RATIO x R
where R = reference(standard)/reference(sample)

NORMALIZATION FACTOR: 1.000

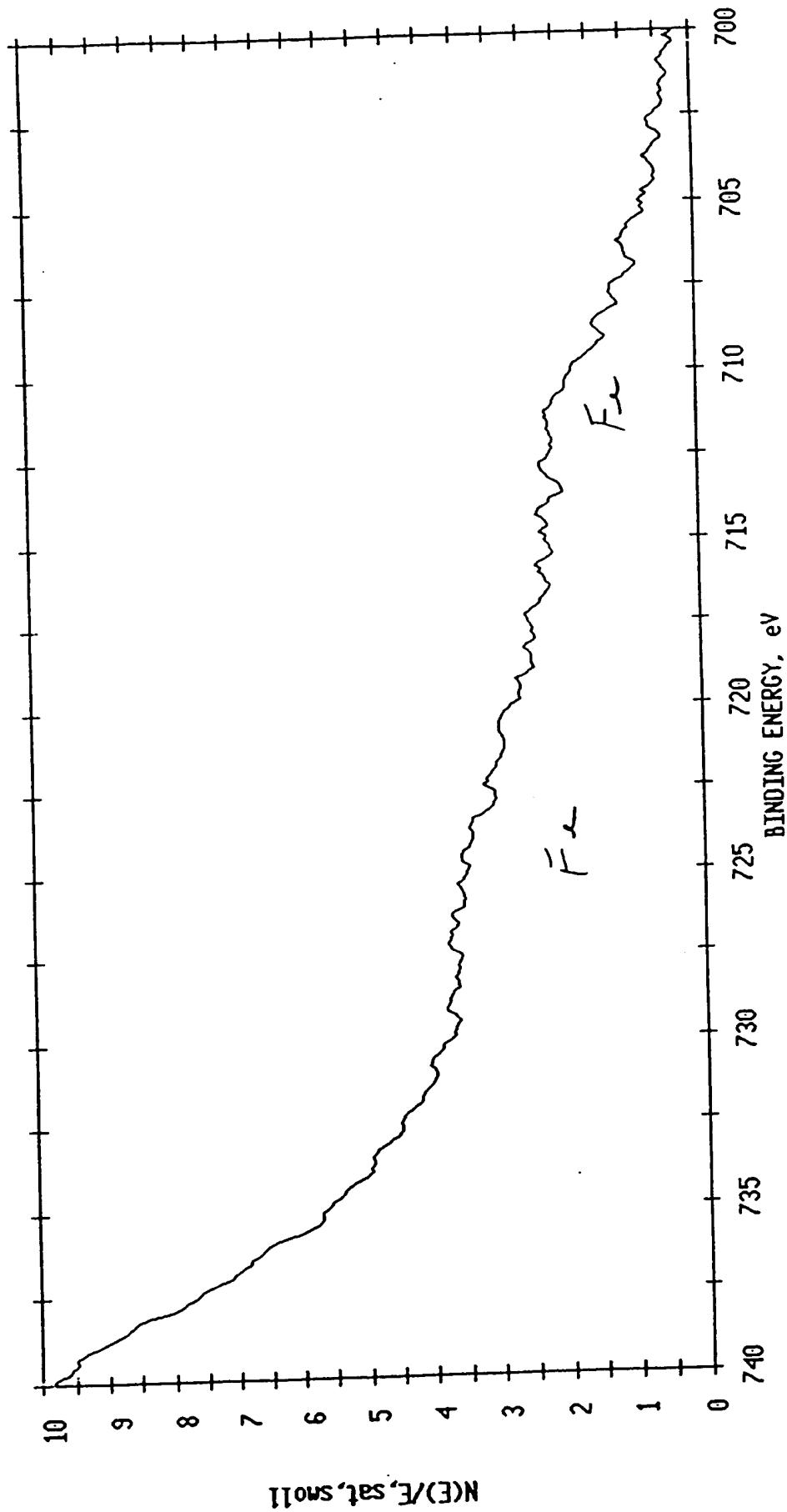
ESCA SURVEY 11/19/93 ANGLE= 15 deg ACQ TIME=29.36 min
FILE: Nitest28 Ni wire untreated (base line) using Al X-Ray's.
SCALE FACTOR= 10.010 k c/s, OFFSET= 1.574 k c/s PASS ENERGY=178.950 ev Al 400 W



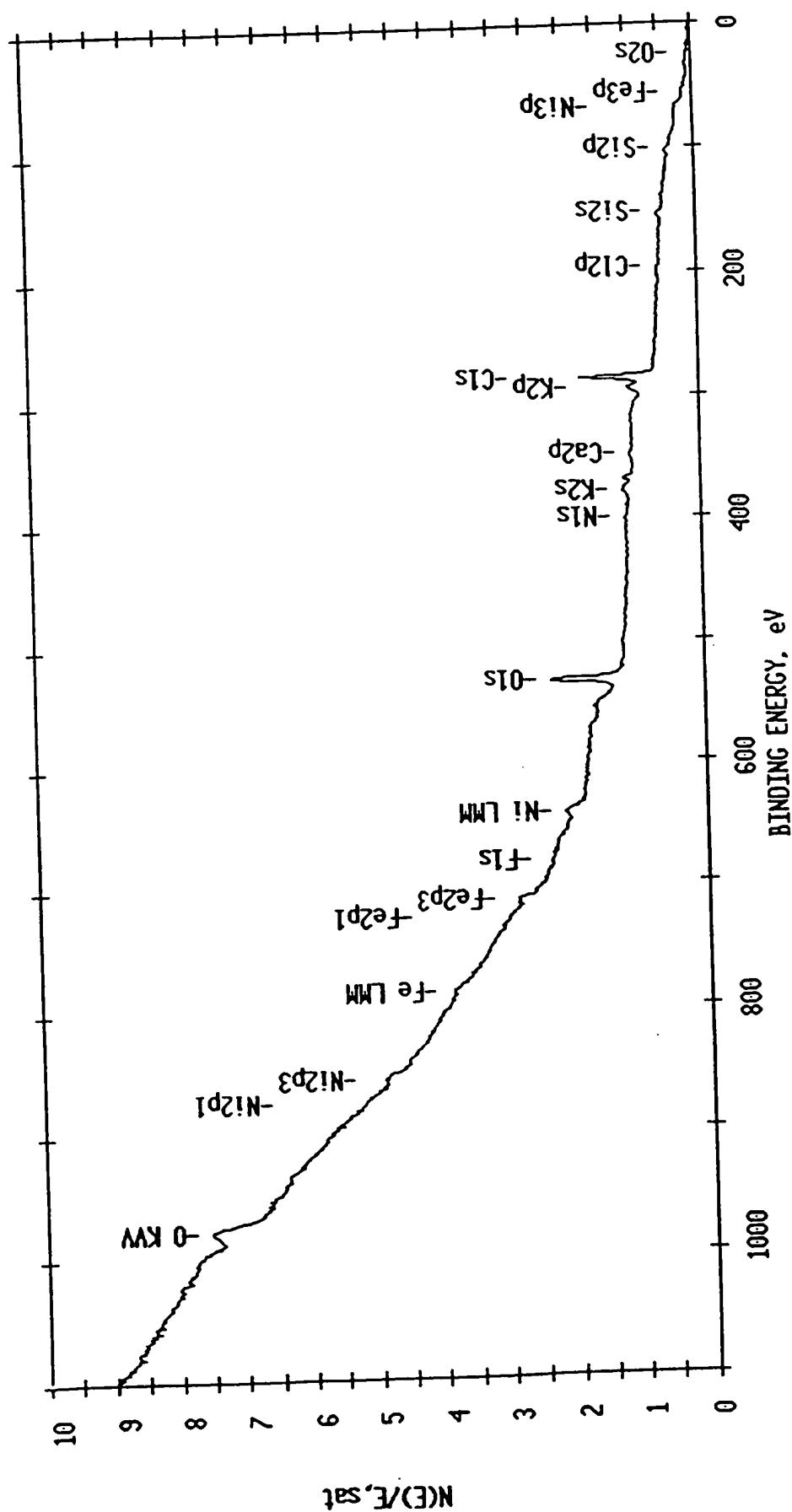
ESCA MULTIPLEX 11/19/93 EL=C1 REG 1 ANGLE= 15 deg ACQ TIME=4.19 min
FILE: Nitest27 Ni wire untreated (base line) using Al X-ray's.
SCALE FACTOR= 0.928 k c/s, OFFSET= 5.646 k c/s PASS ENERGY=143.050 eV Al 400 W

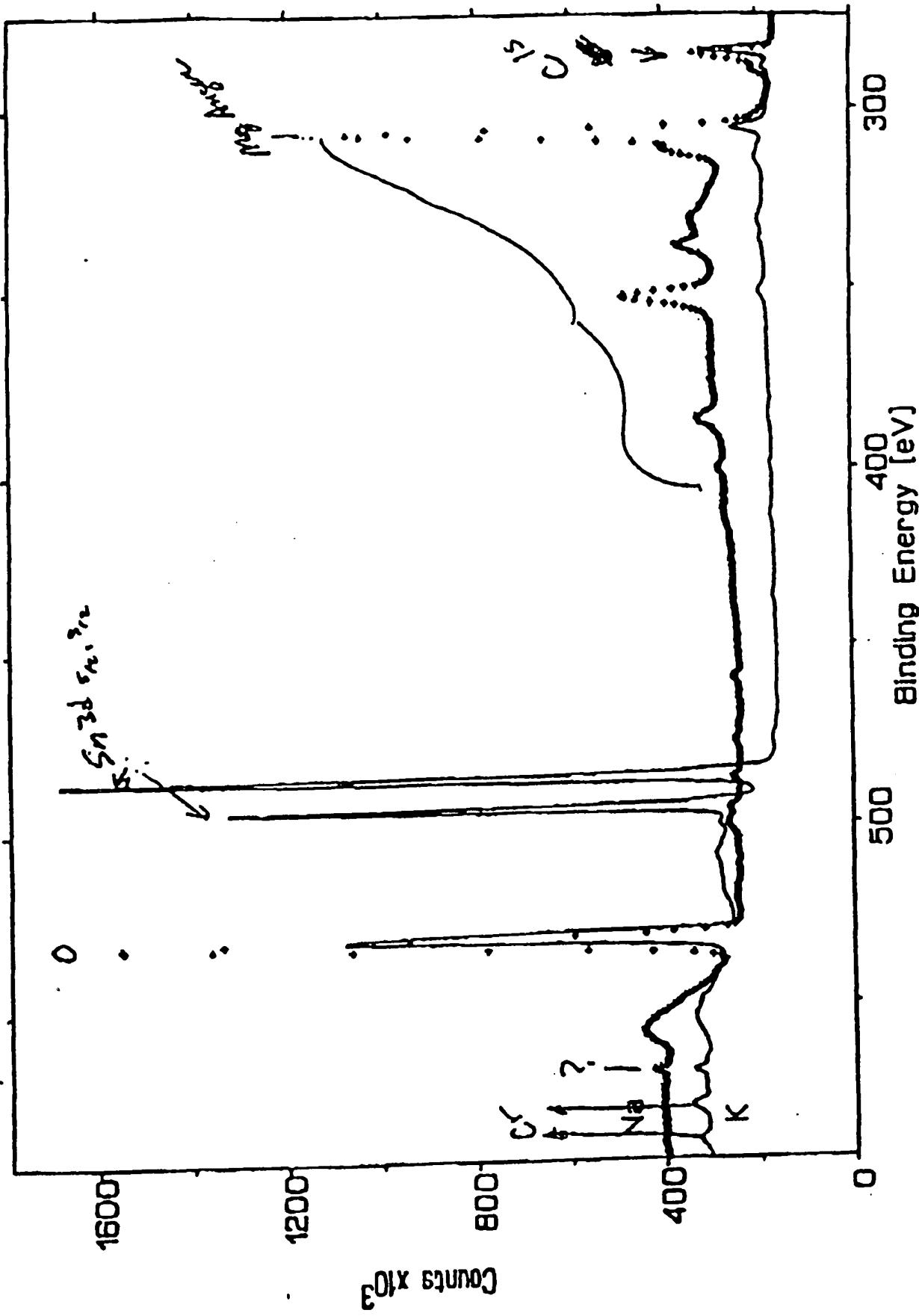


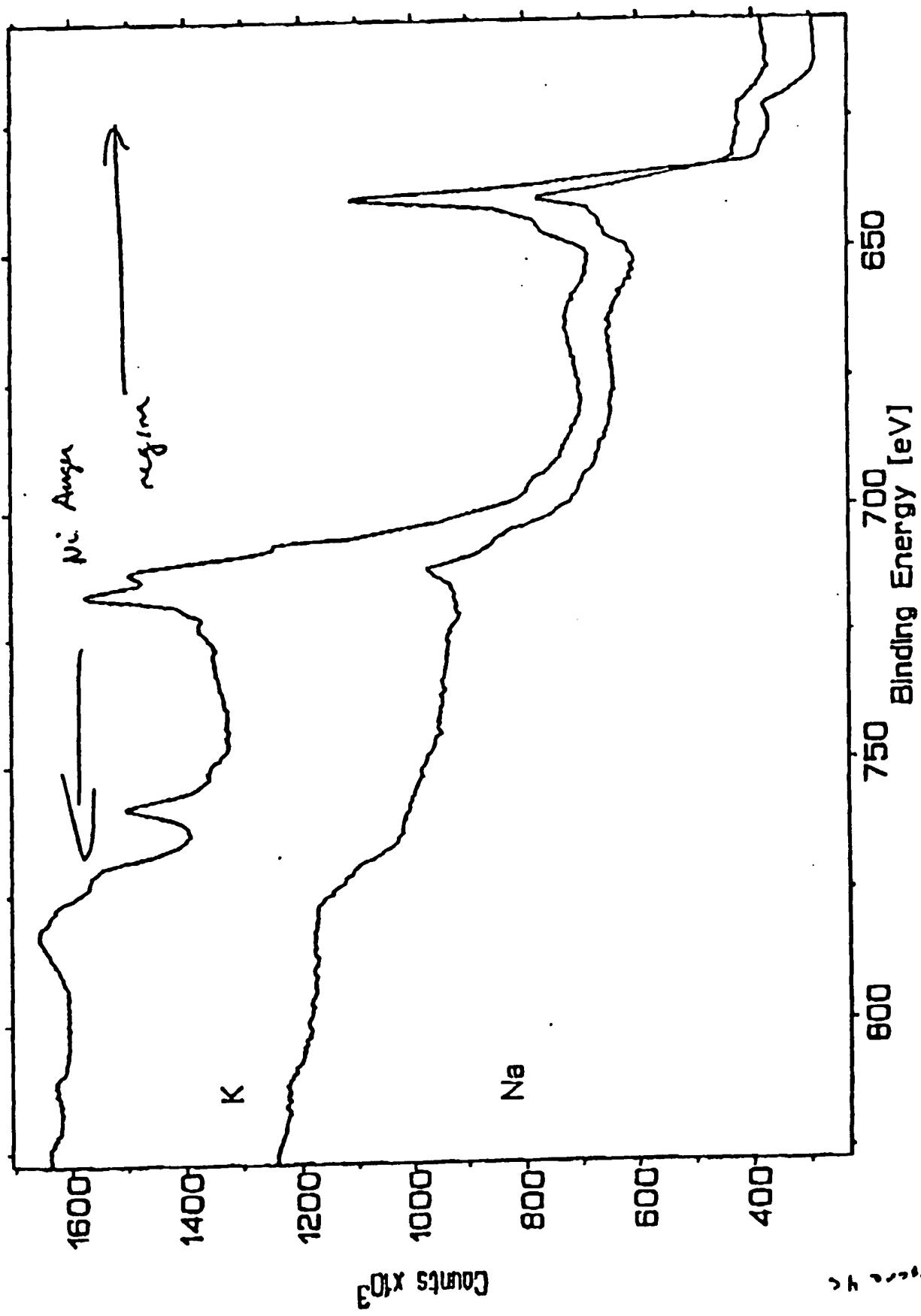
ESCA MULTIPLEX 11/29/93 EL=FeI REG 1 ANGLE= 15 deg ACO TIME=116.96 min
FILE: Nitest55 More Fe spectra of Ni wire treated overnight at the IRC
SCALE FACTOR= 0.134 k c/s, OFFSET= 9.937 k c/s PASS ENERGY=143.050 eV Mg 300 k

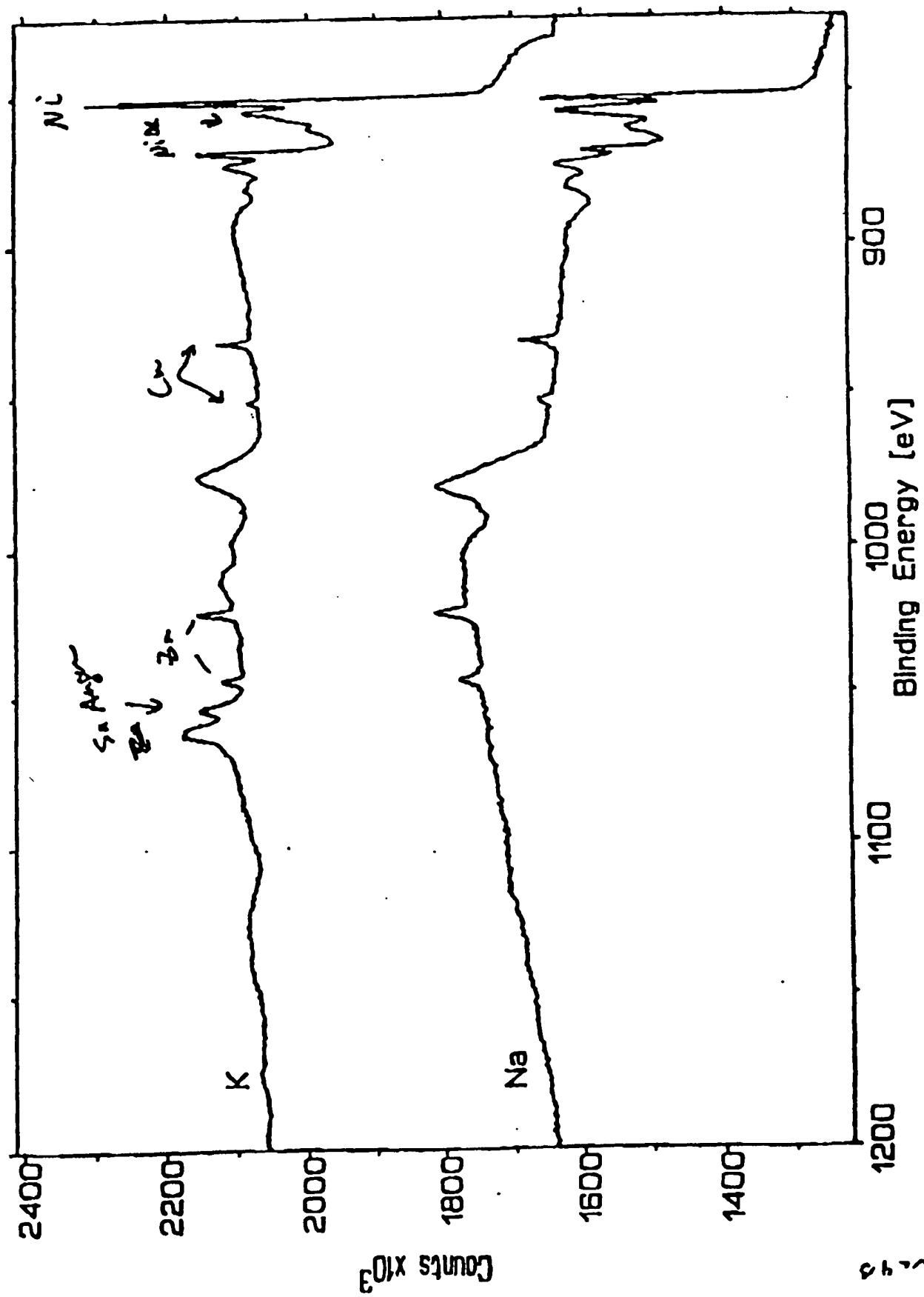


ESCA SURVEY 11/24/93 ANGLE= 15 deg ACQ TIME=29.36 min
FILE: Nitest51 Ni wire treated overnight at IRC.
SCALE FACTOR= 7.011 k c/s, OFFSET= 0.979 k c/s PASS ENERGY=178.950 eV Al 400 μ

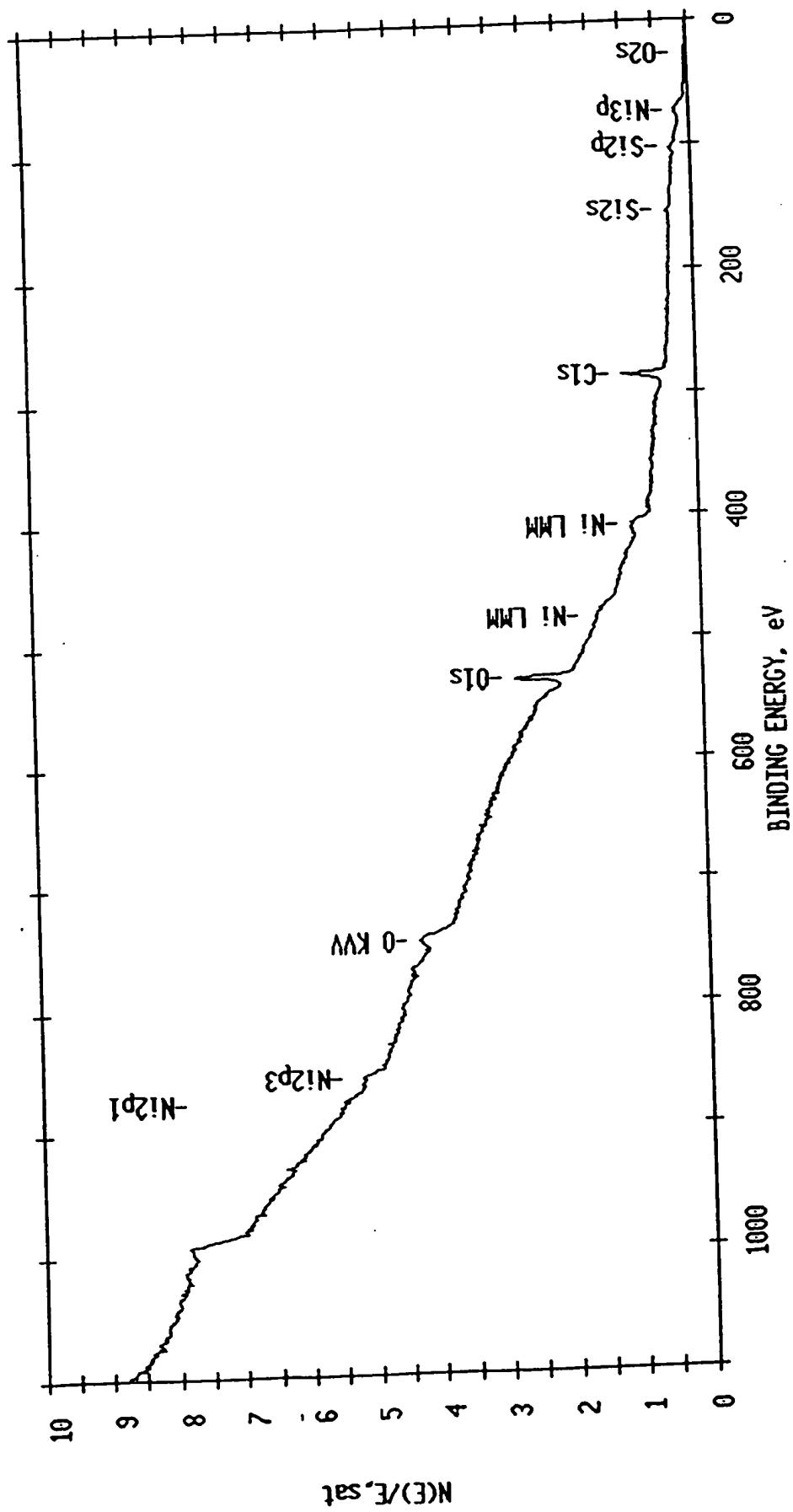




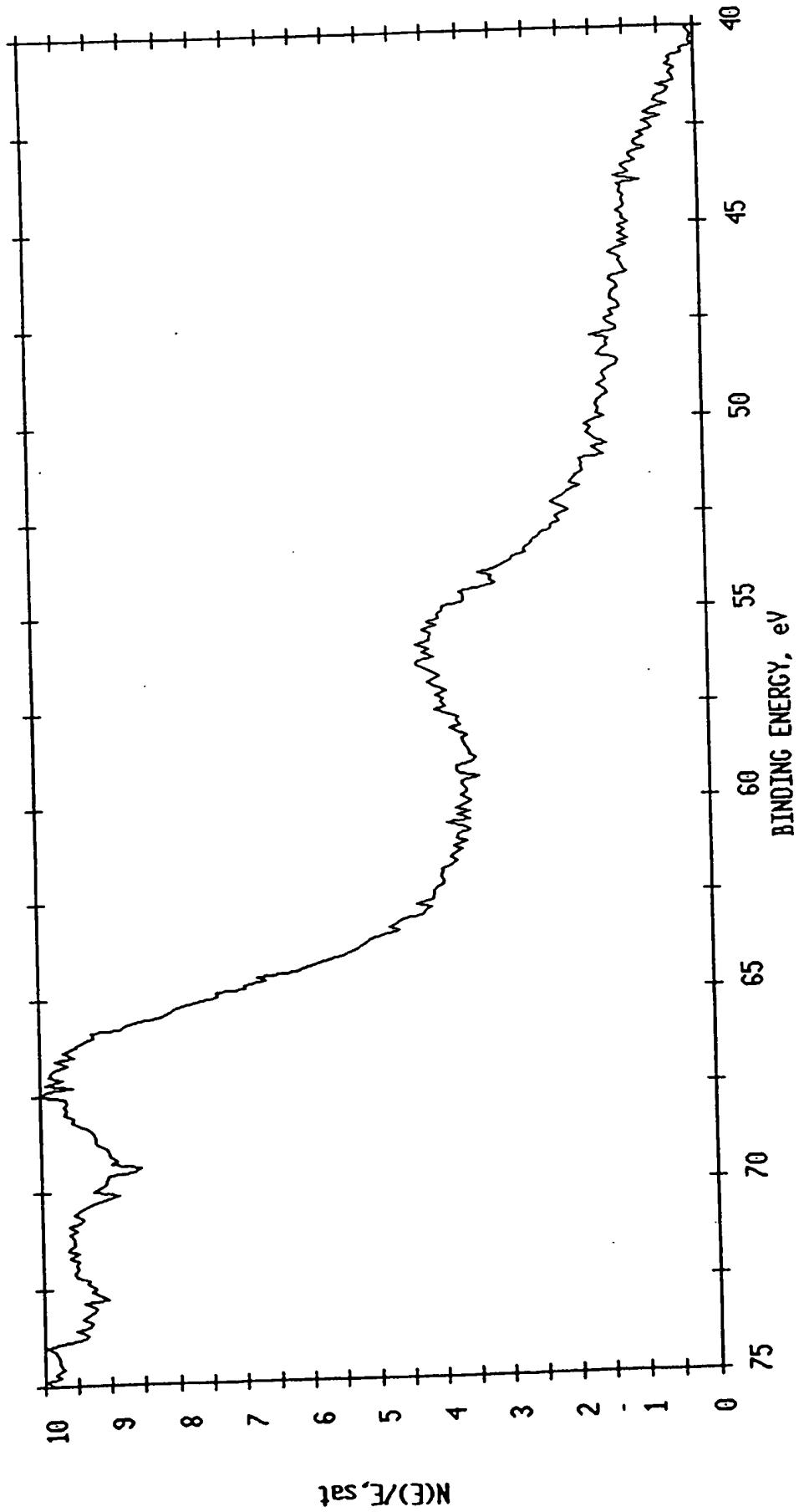




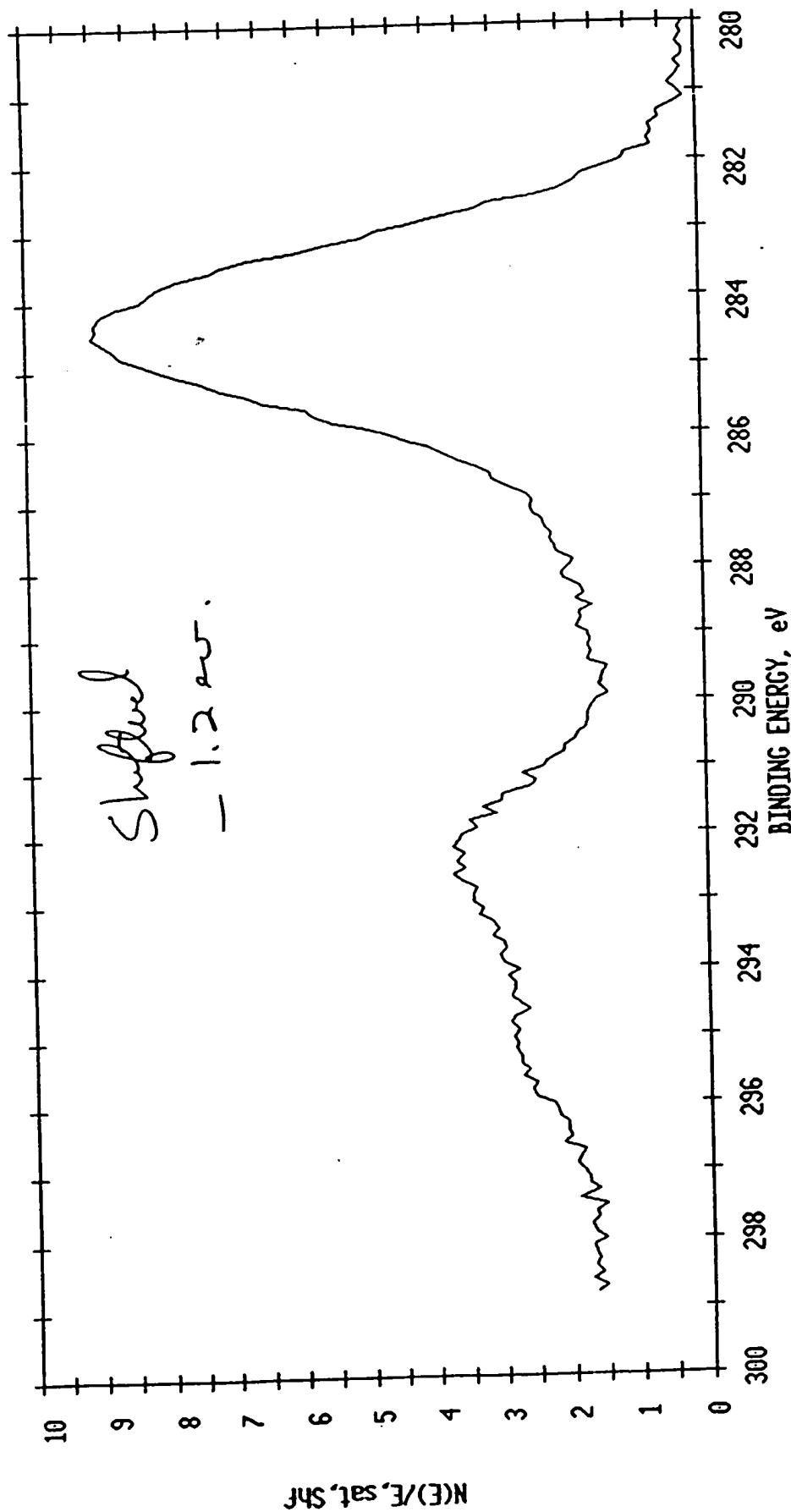
ESCA SURVEY 11/29/93 ANGLE= 15 deg ACQ TIME=29.36 min
FILE: Nitest56 Ni wire treated over Thanksgiving weekend.
SCALE FACTOR= 4.822 k c/s, OFFSET= 0.306 k c/s PASS ENERGY=178.950 eV Mg 300 μ



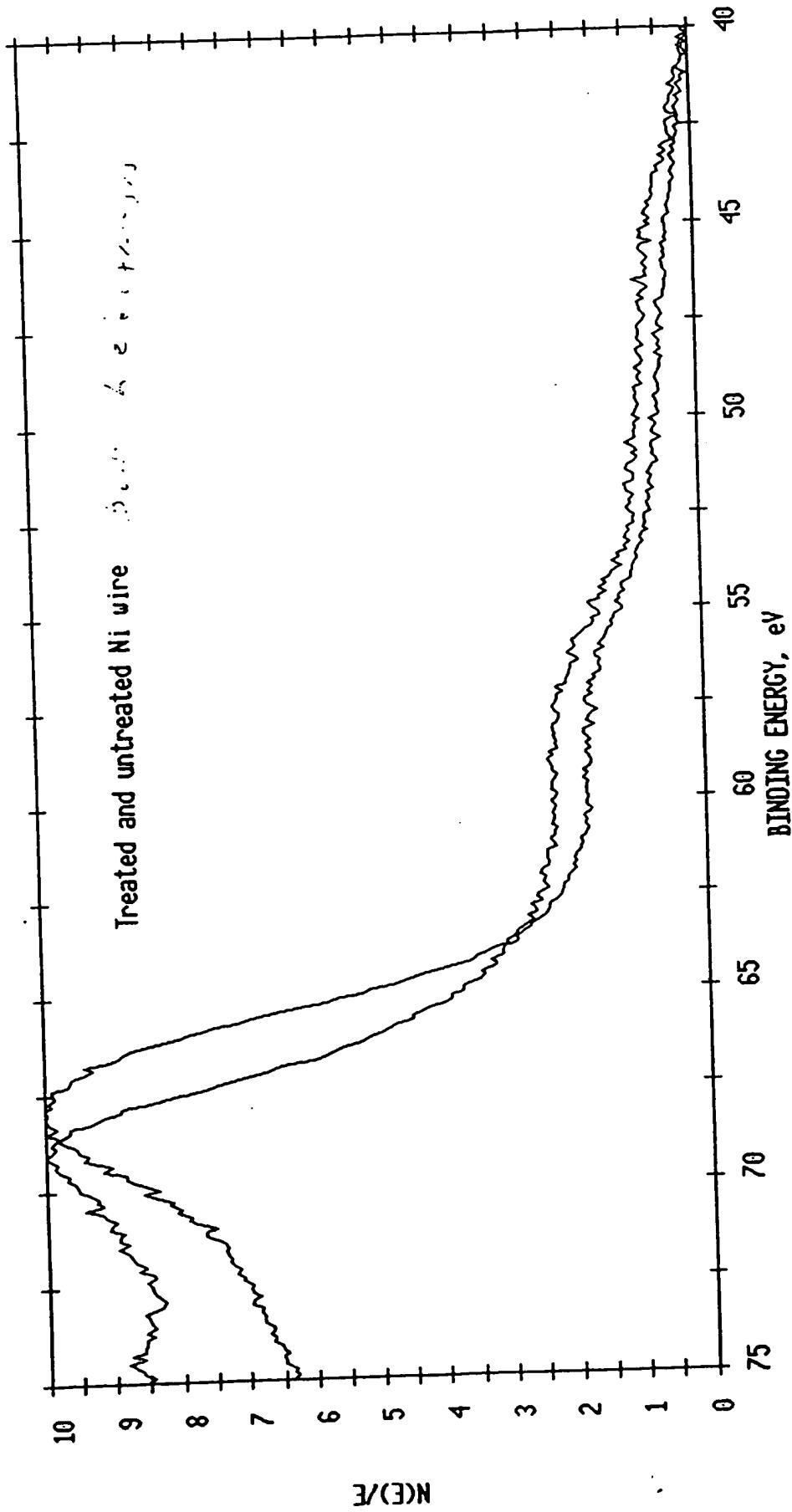
ESCA MULTIPLEX 11/24/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=114.08 min
FILE: Nitest50 Ni wire treated overnight at IRC.
SCALE FACTOR= 0.095 K c/s, OFFSET= 1.036 K c/s PASS ENERGY=143.050 eV A1 400 W



ESCA MULTIPLEX 11/24/93 EL=C1 REG 1 ANGLE= 15 deg ACQ TIME=7.54 min
FILE: Nitest50 Ni wire treated overnight at IRC.
SCALE FACTOR= 0.569 k c/s, OFFSET= 3.655 k c/s PASS ENERGY=143.050 eV Al 400 μ



ESCA MULTIPLEX 11/19/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=61.43 min
FILE: Nitest27 Ni wire untreated (base line) using Al X-Ray's.
SCALE FACTOR= 0.307 k c/s, OFFSET= 1.683 k c/s PASS ENERGY=143.050 eV Al 400 W





SPACE and ADVANCED PROGRAMS UNIT
P. O. BOX 1625
IDAHO FALLS ID 83415

To: Mike Hawkins

Company/Org: _____

Fax No: _____

Verify No: _____

From: Mike Jacobs

Company/Org: _____

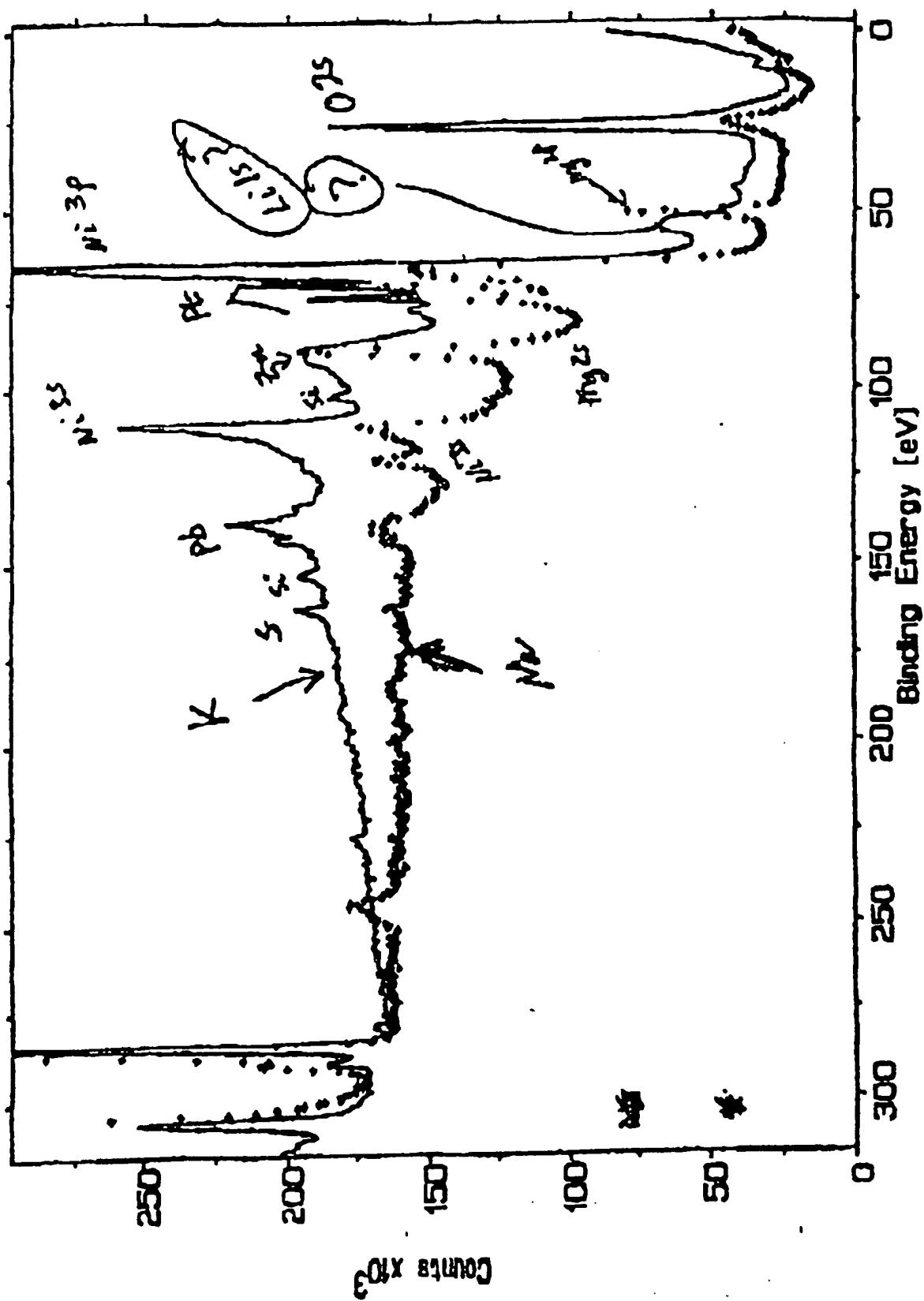
Phone No: _____

Fax No: 1-208-526-2061 (FTS) 8-208-526-2061

No. of pages including the cover page: 2

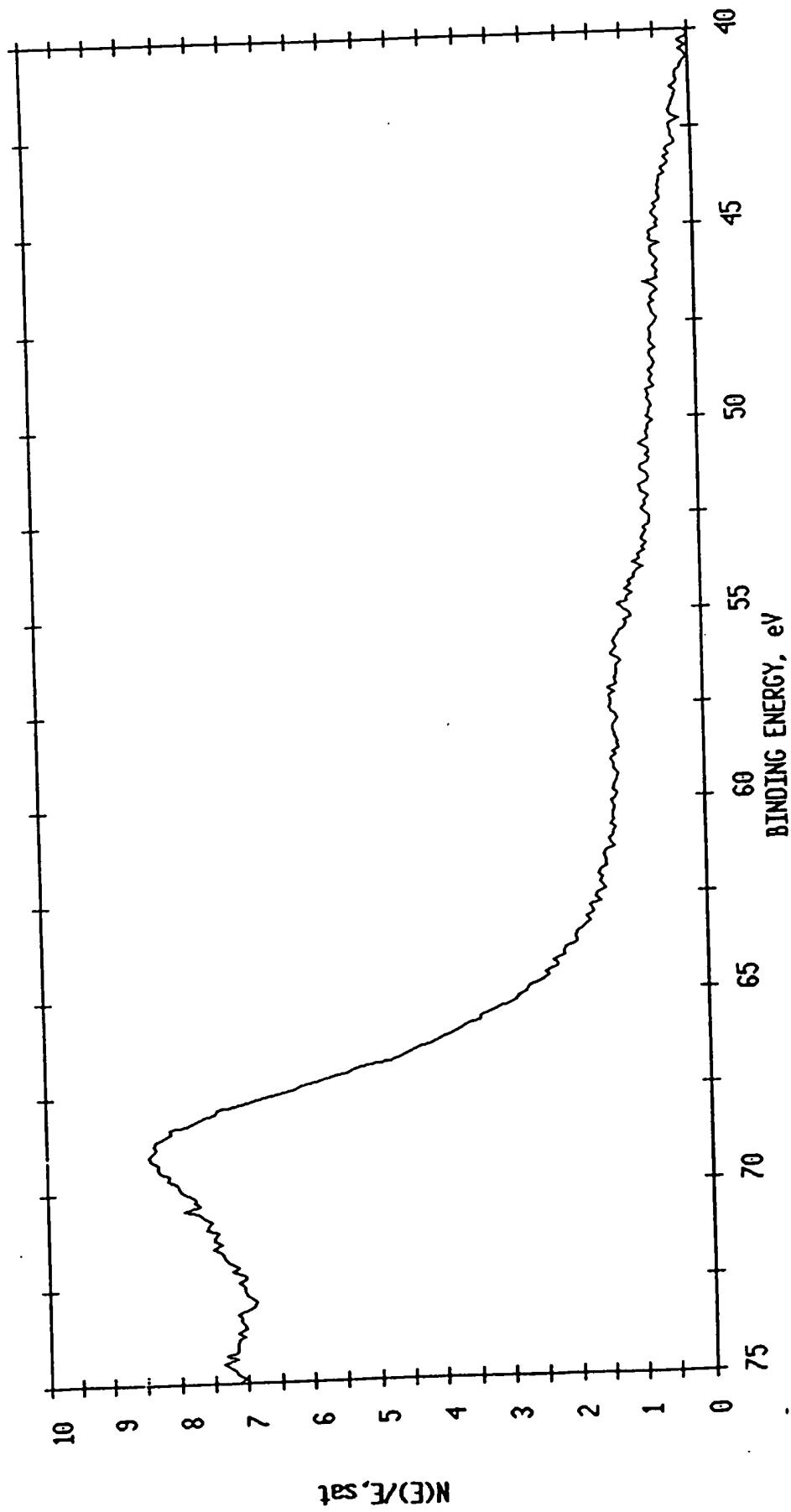
Note:

Figure 4A

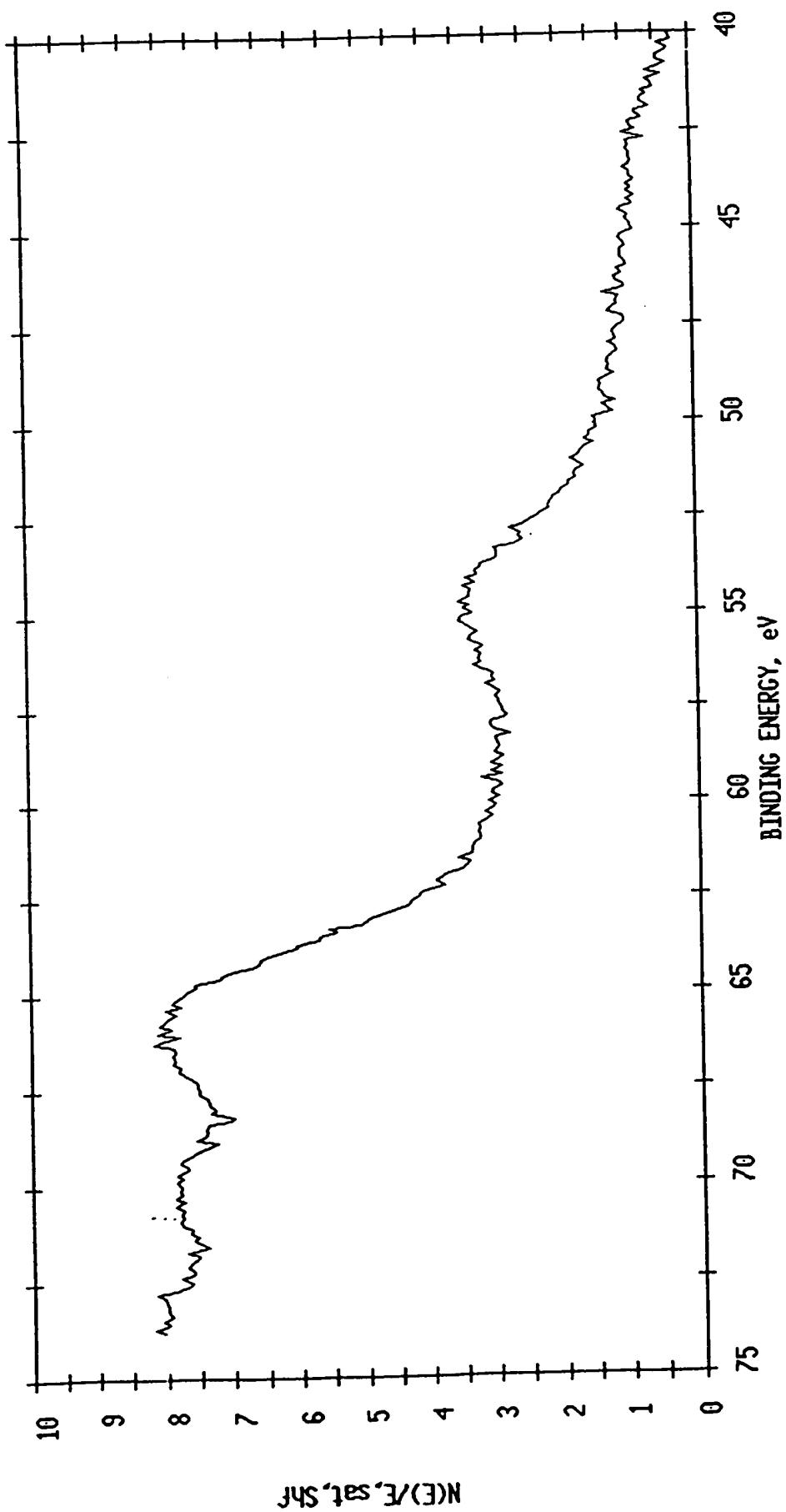


NOV 12 1983 18137 18242 P.03/83
P.03/83 1803.00-28 18137 18242 P.03/83
LIBS DE PRIN

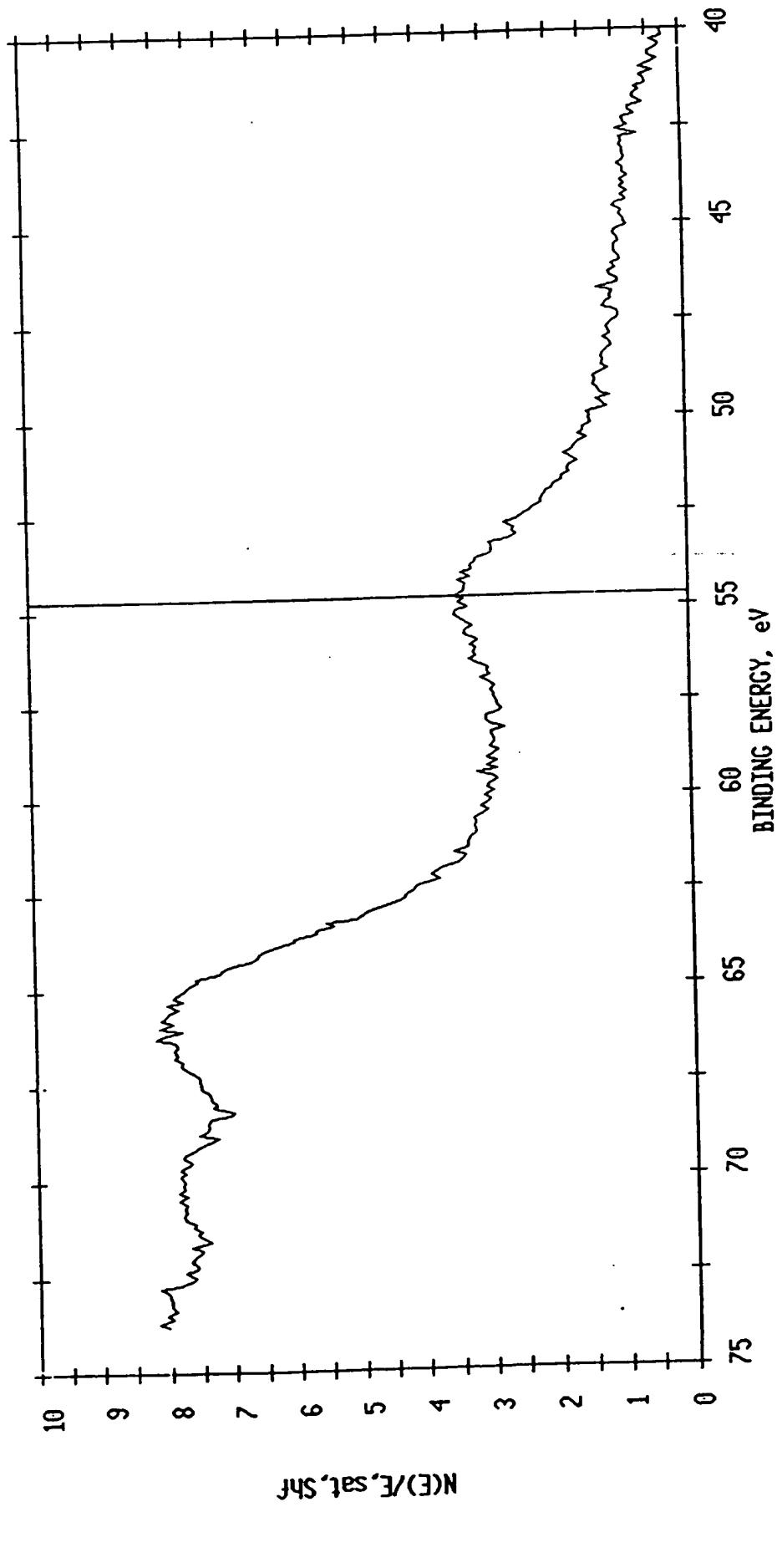
ESCA MULTIPLEX 11/18/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=67.28 min
FILE: Nitest20 Ni wire processed in lab. as received.
SCALE FACTOR= 0.331 k c/s, OFFSET= 2.436 k c/s PASS ENERGY=143.050 eV Al 400 μ

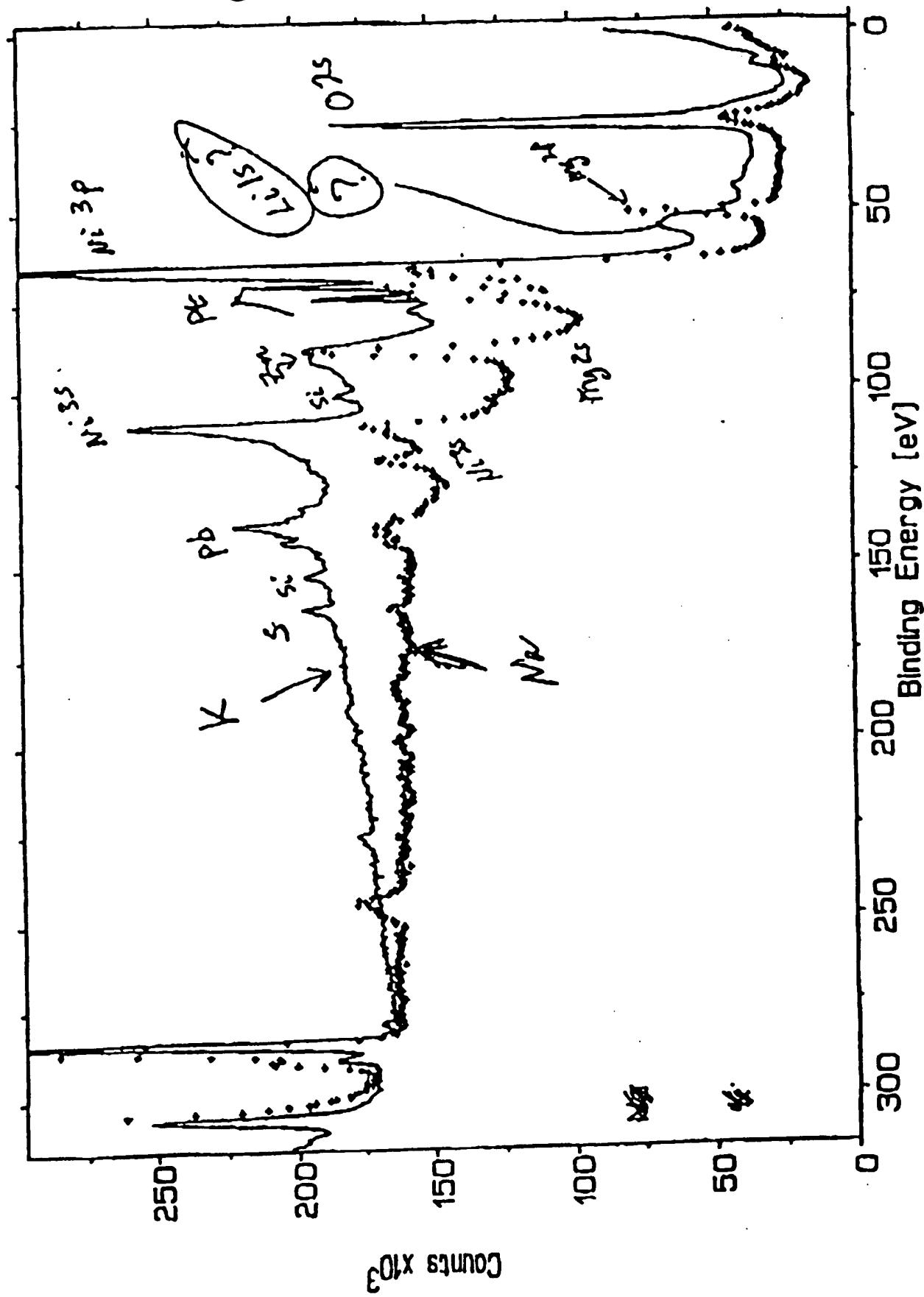


ESCA MULTIPLEX 11/24/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=114.08 min
FILE: Nitest50 Ni wire treated overnight at IRC.
SCALE FACTOR= 0.116 k c/s, OFFSET= 1.036 k c/s PASS ENERGY=143.050 eV AI 400 W

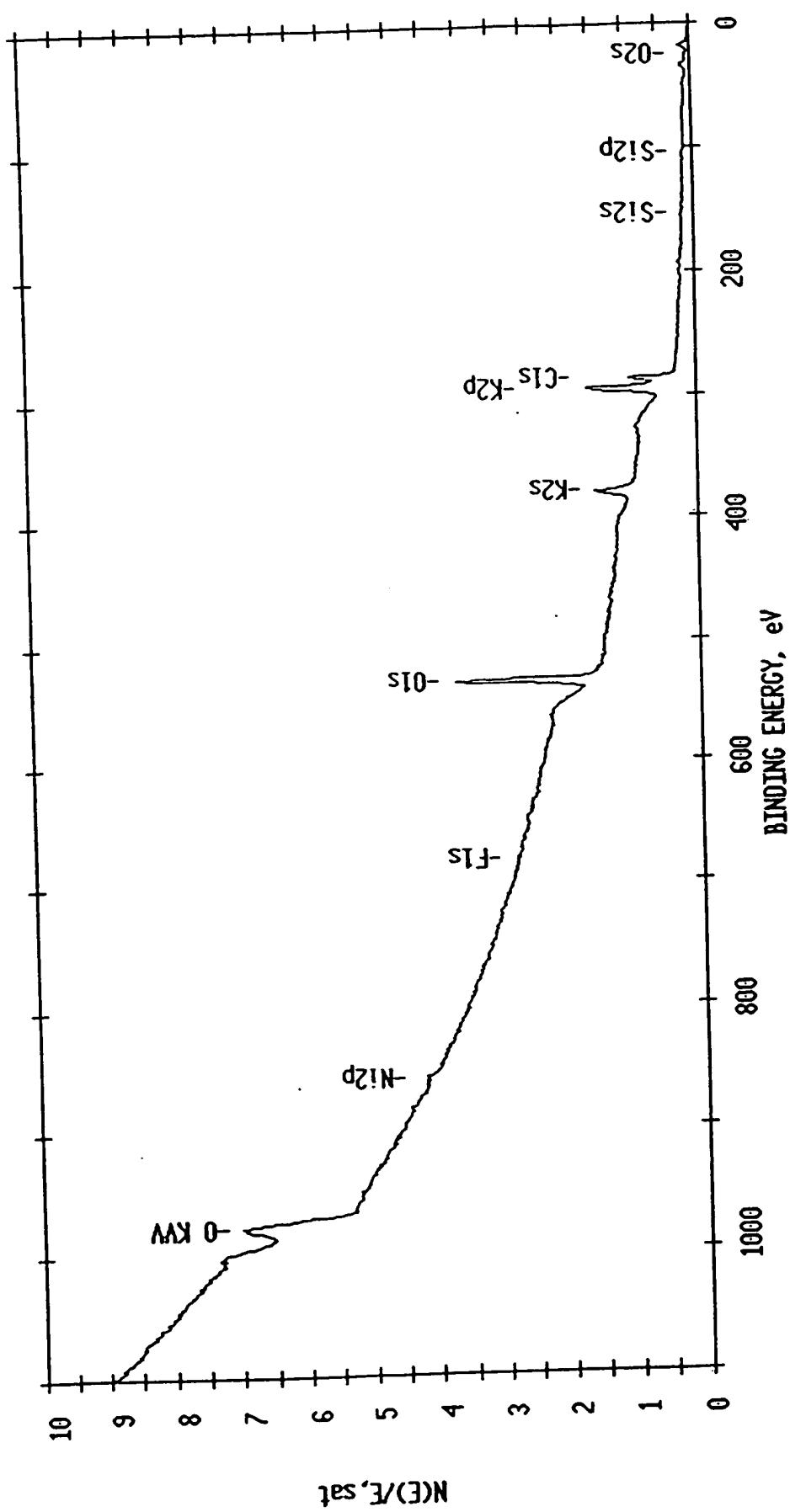


Cursor
Counts 28173 Counts/Sec 1445
Energy (eV) 54.700
E

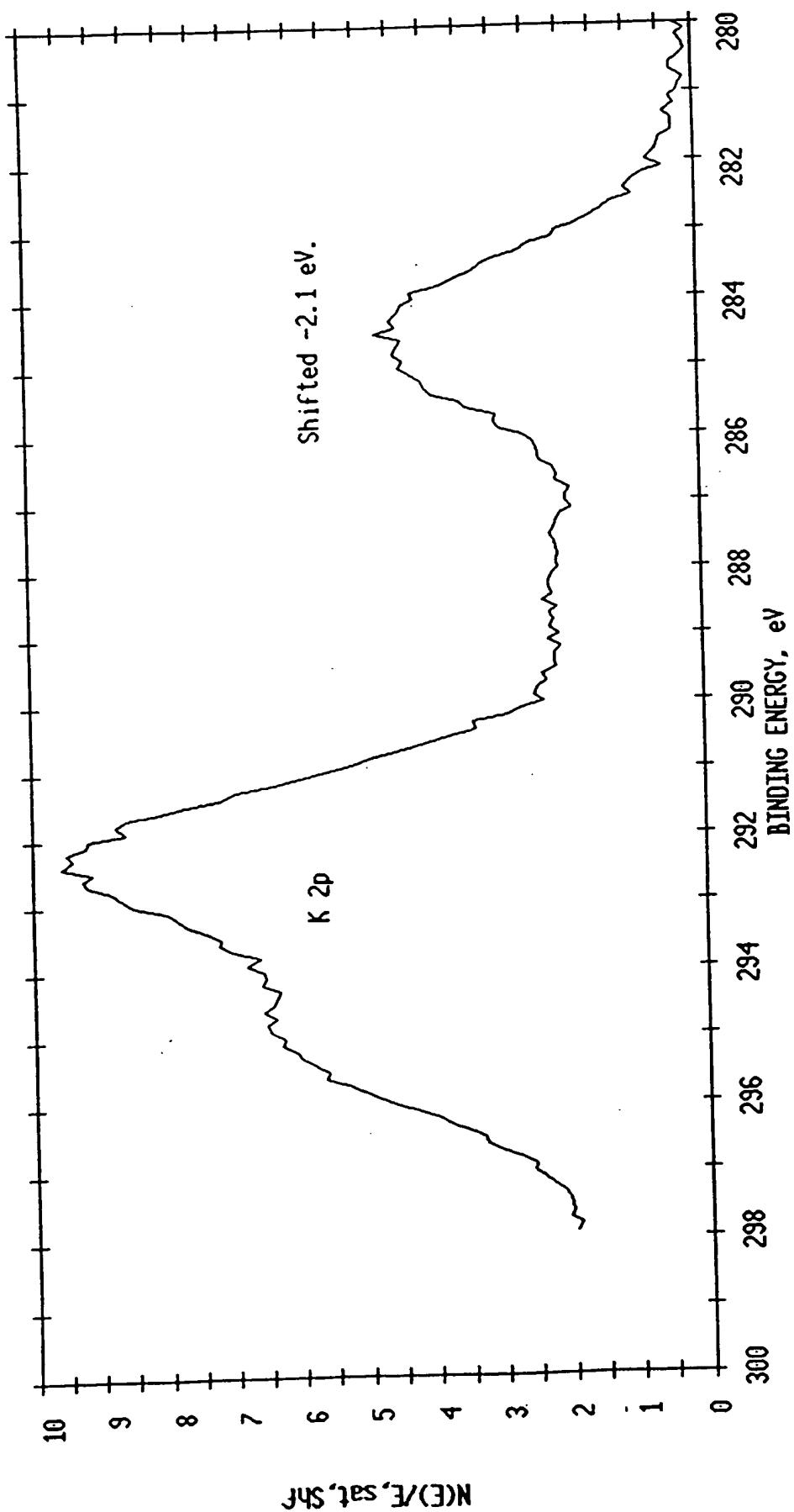




ESCA SURVEY 11/23/93 ANGLE= 15 deg ACQ TIME=29.36 min
 FILE: Nitest40 Ni foil after treatment for 5 days.
 SCALE FACTOR= 9.221 k c/s, OFFSET= 0.532 k c/s PASS ENERGY=178.950 eV Al 400 W

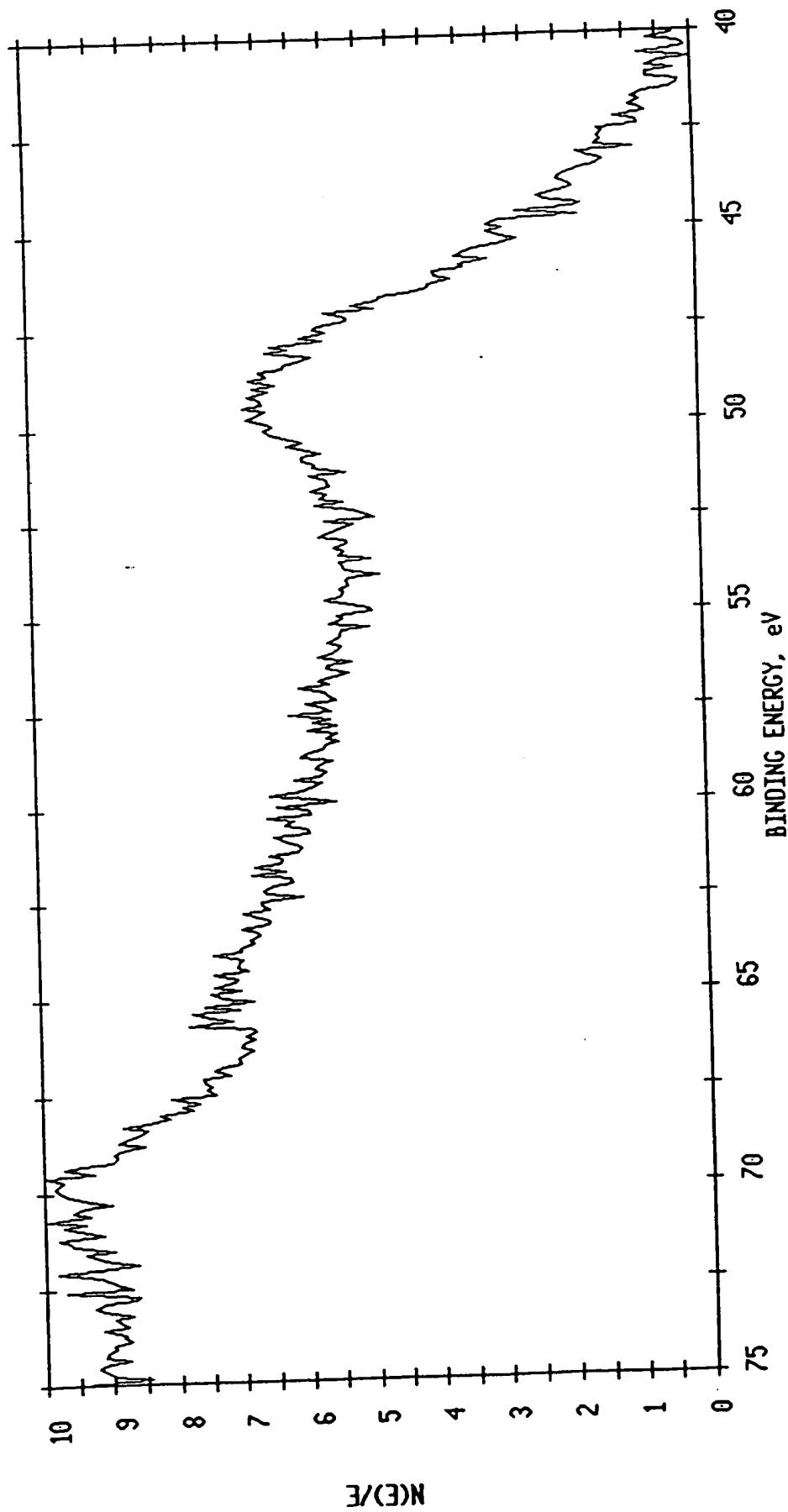


ESCA MULTIPLEX 11/23/93 EL=C1 REG 1 ANGLE= 15 deg ACQ TIME=2.51 min
FILE: Nitest41 Ni foil after treatment for 5 days.
SCALE FACTOR= 0.905 K c/s, OFFSET= 1.883 K c/s PASS ENERGY=143.050 eV Al 400 W

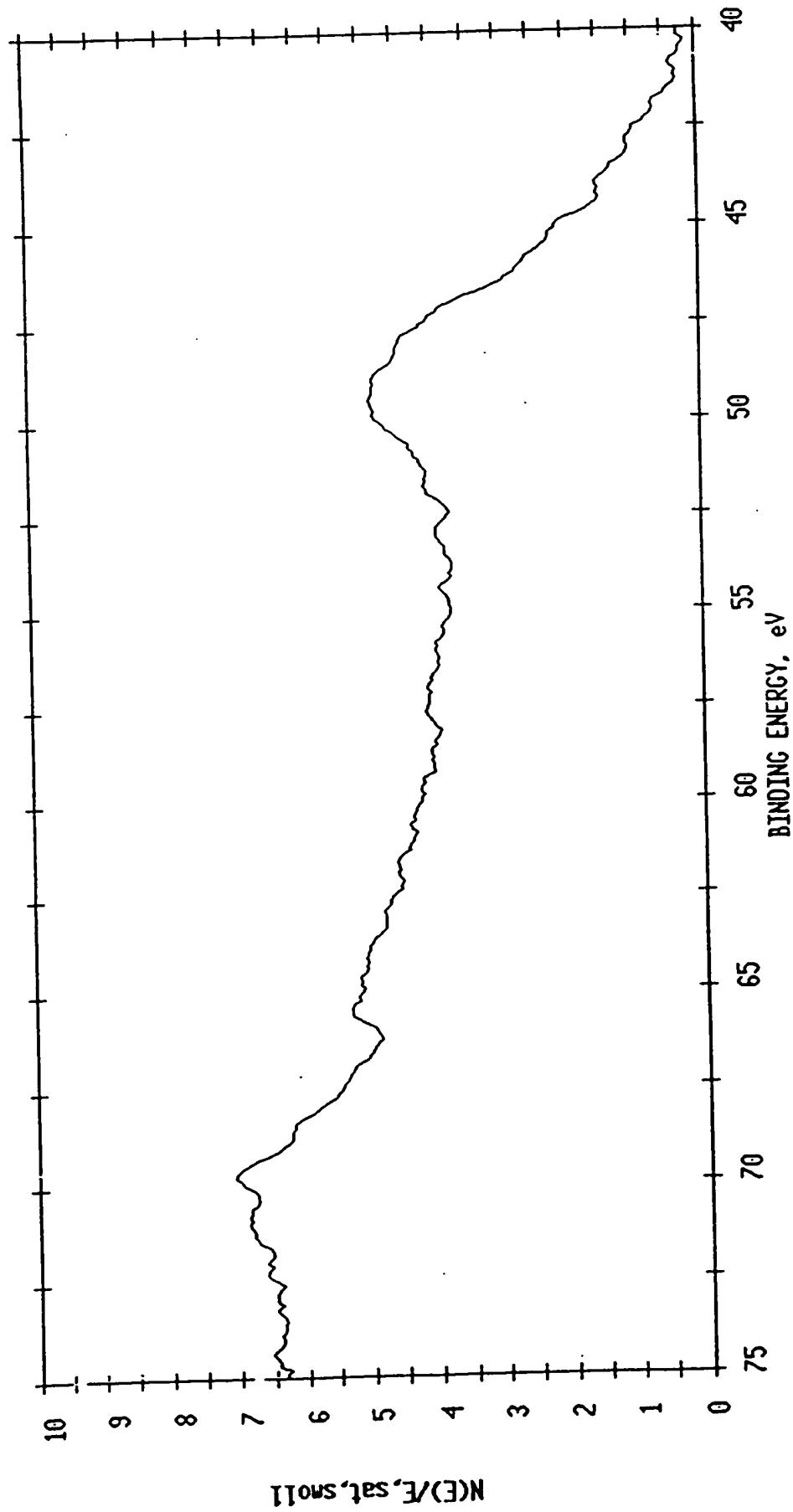


ESCA MULTIPLEX 11/23/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=114.08 min

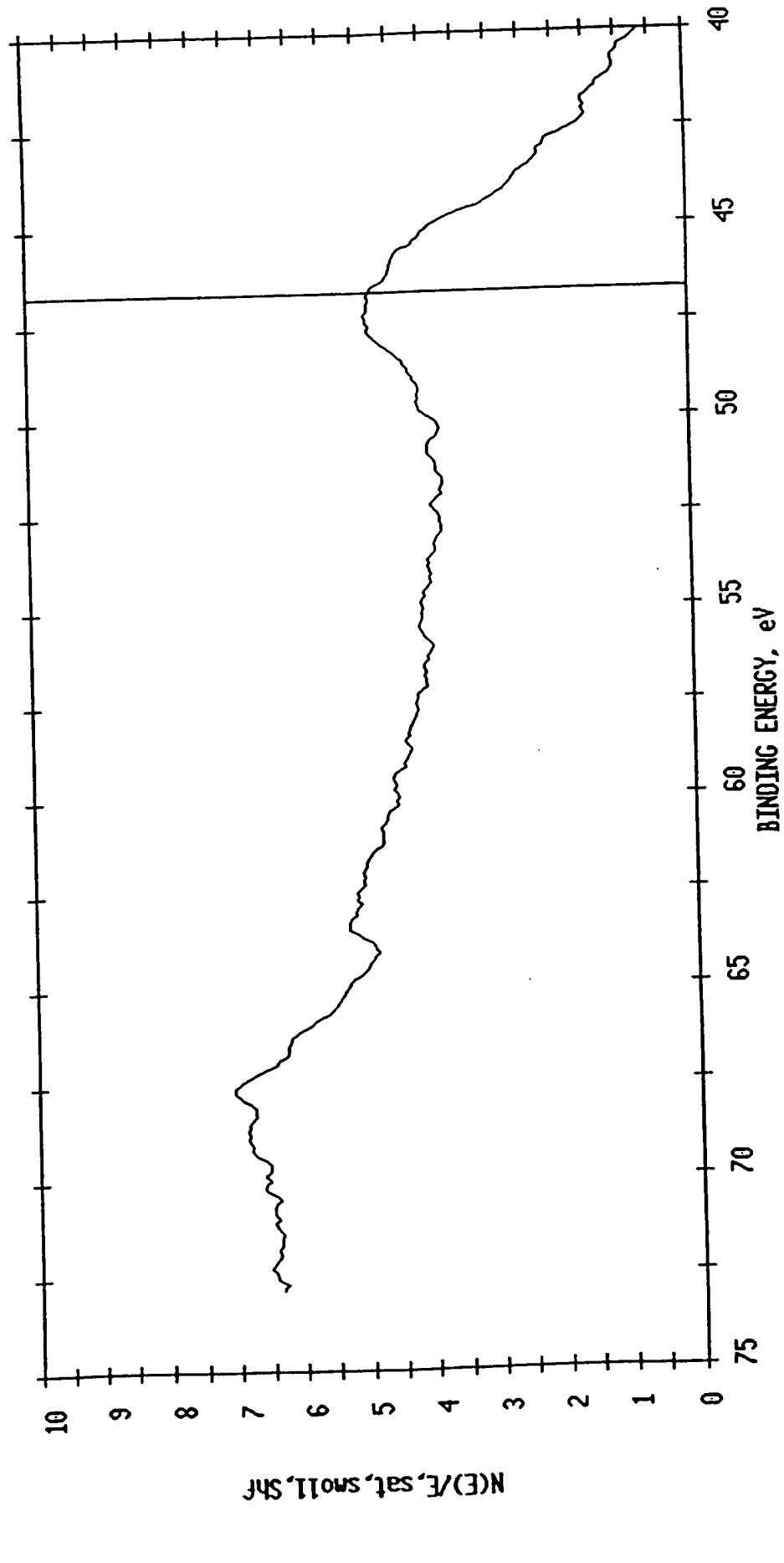
FILE: Nitest41 Ni foil after treatment for 5 days.
SCALE FACTOR= 0.029 k c/s, OFFSET= 0.855 k c/s PASS ENERGY=143.050 eV AI 400 W



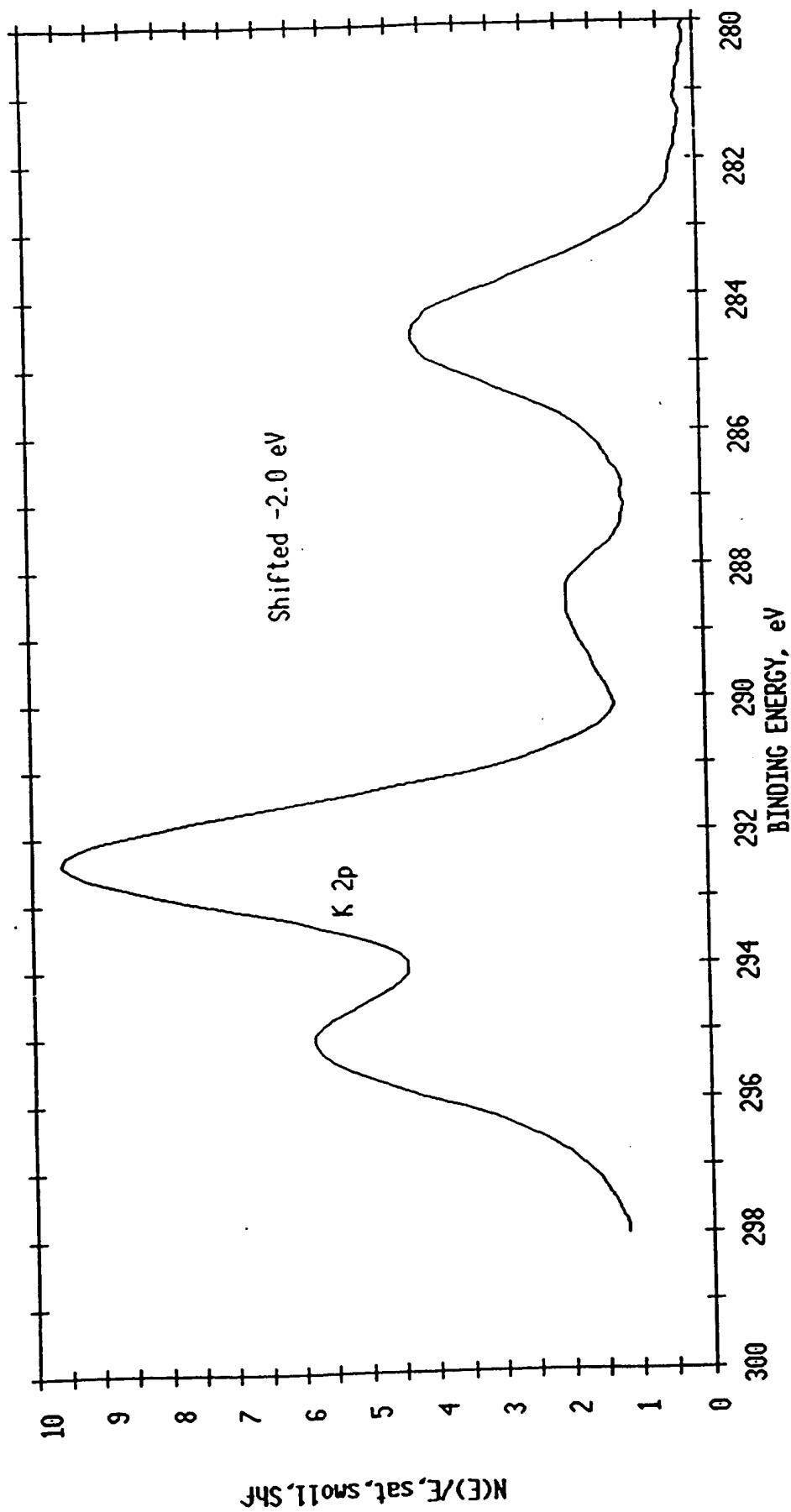
ESCA MULTIPLEX 11/23/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=114.08 min
FILE: Nitest41 Ni foil after treatment for 5 days.
SCALE FACTOR= 0.039 k c/s, OFFSET= 0.755 k c/s PASS ENERGY=143.050 eV Al 400 μ



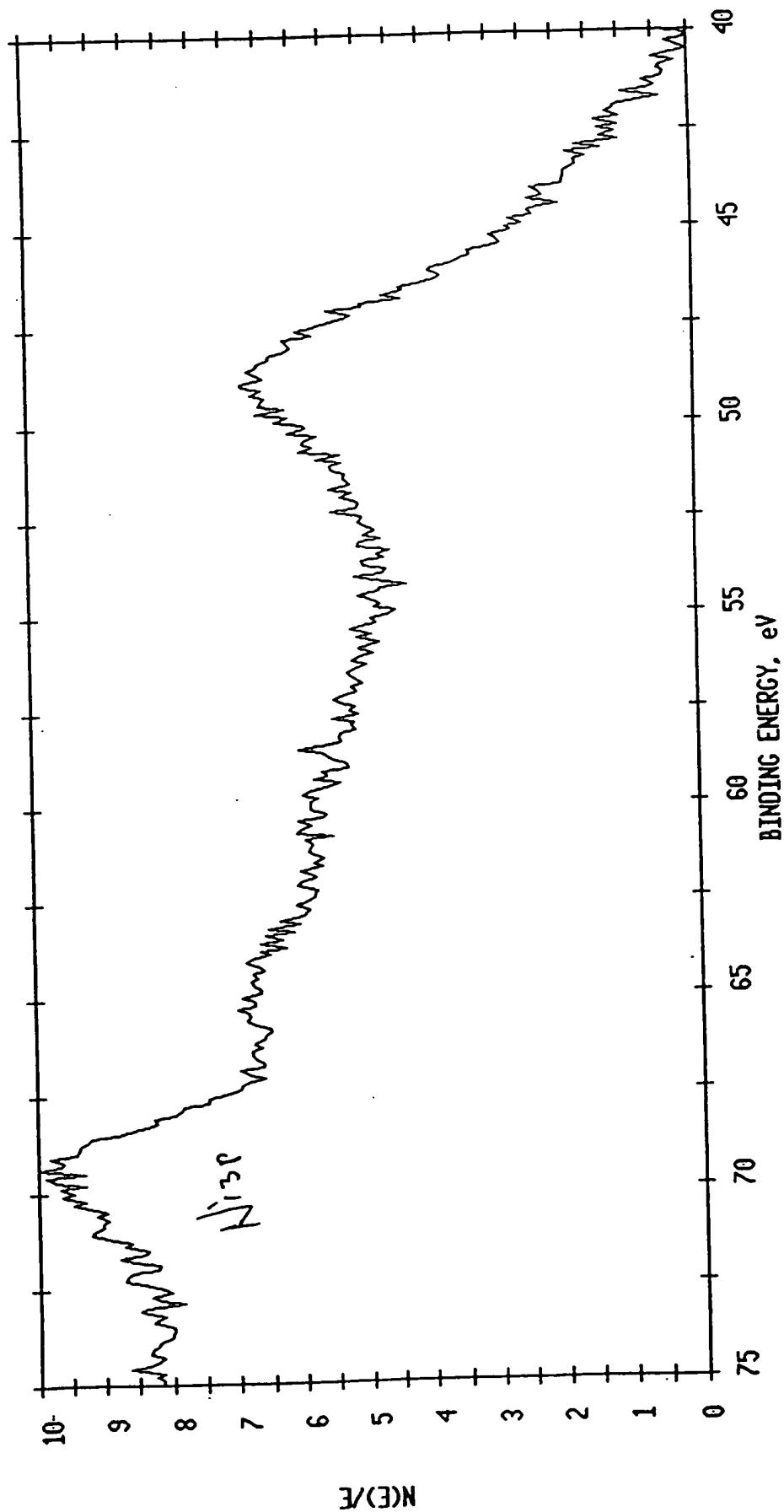
Cursor
Counts 18374 Counts/Sec 942
Energy (eV) 46.700
E



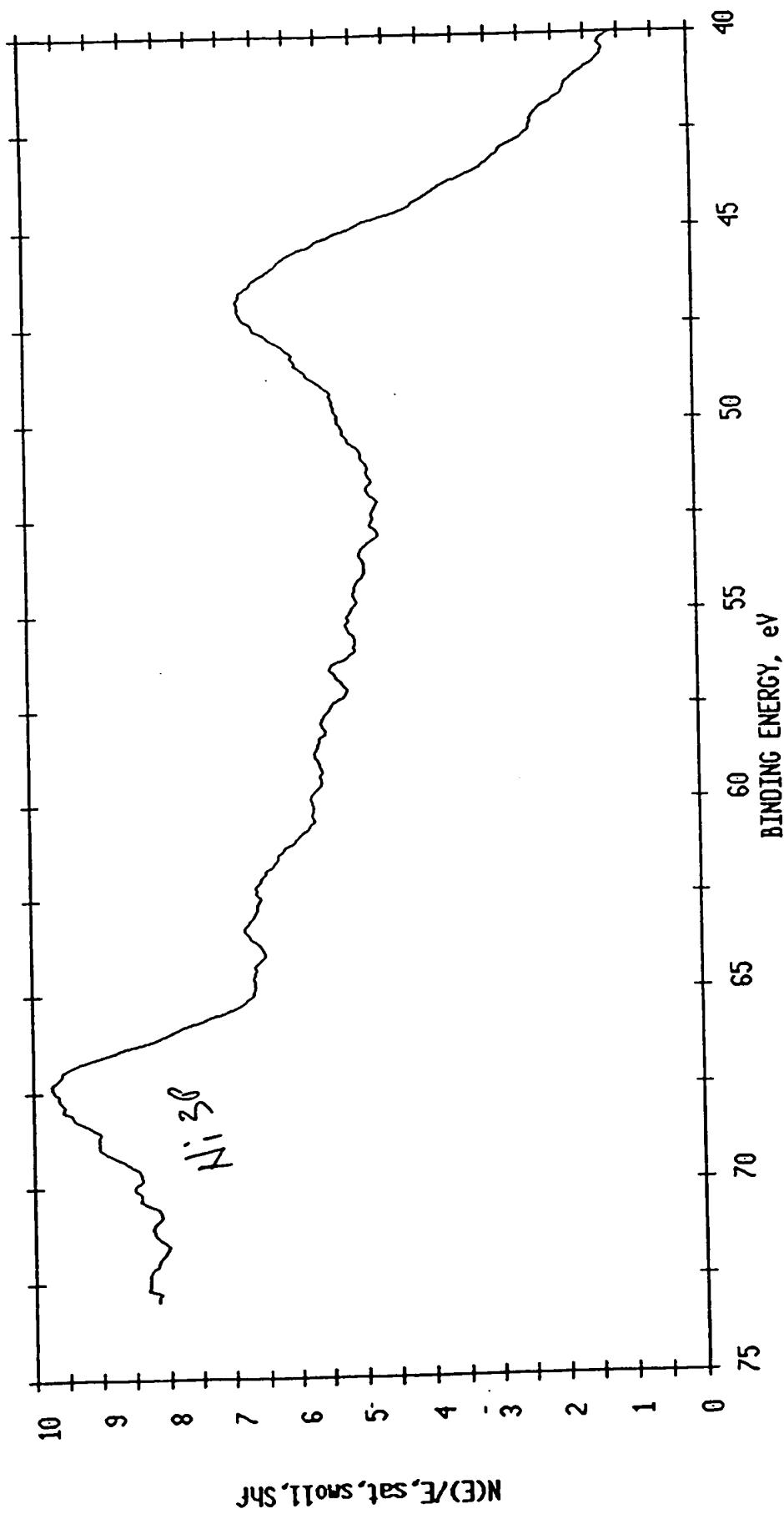
ESCA MULTIPLEX 11/23/93 EL=C1 REG 1 ANGLE= 15 deg ACQ TIME=4.19 min
FILE: Nitest42 Ni foil after treatment for 5 days.
SCALE FACTOR= 0.378 k c/s, OFFSET= 0.689 k c/s PASS ENERGY= 71.550 eV Al 400 W



ESCA MULTIPLEX 11/23/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=609.86 min
FILE: Nitest42 Ni foil after treatment for 5 days.
SCALE FACTOR= 0.012 k c/s, OFFSET= 0.455 k c/s PASS ENERGY= 71.550 eV Al 400 μ



ESCA MULTIPLEX 11/23/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=609.86 min
FILE: Nitest42 Ni foil after treatment for 5 days.
SCALE FACTOR= 0.012 k c/s, OFFSET= 0.403 k c/s PASS ENERGY= 71.550 eV Al 400 W



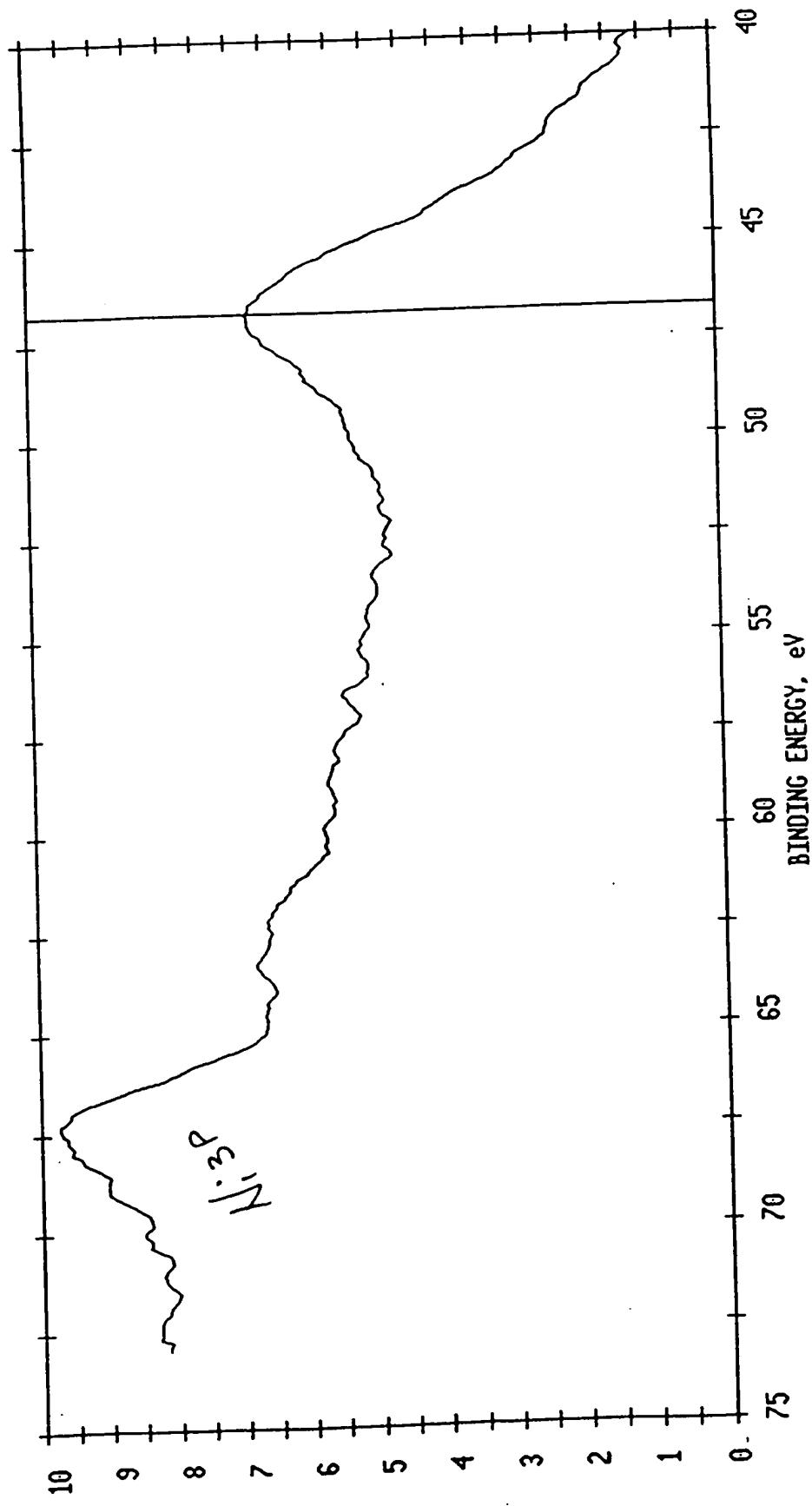
CURSOR

■ Energy (eV) 46.800

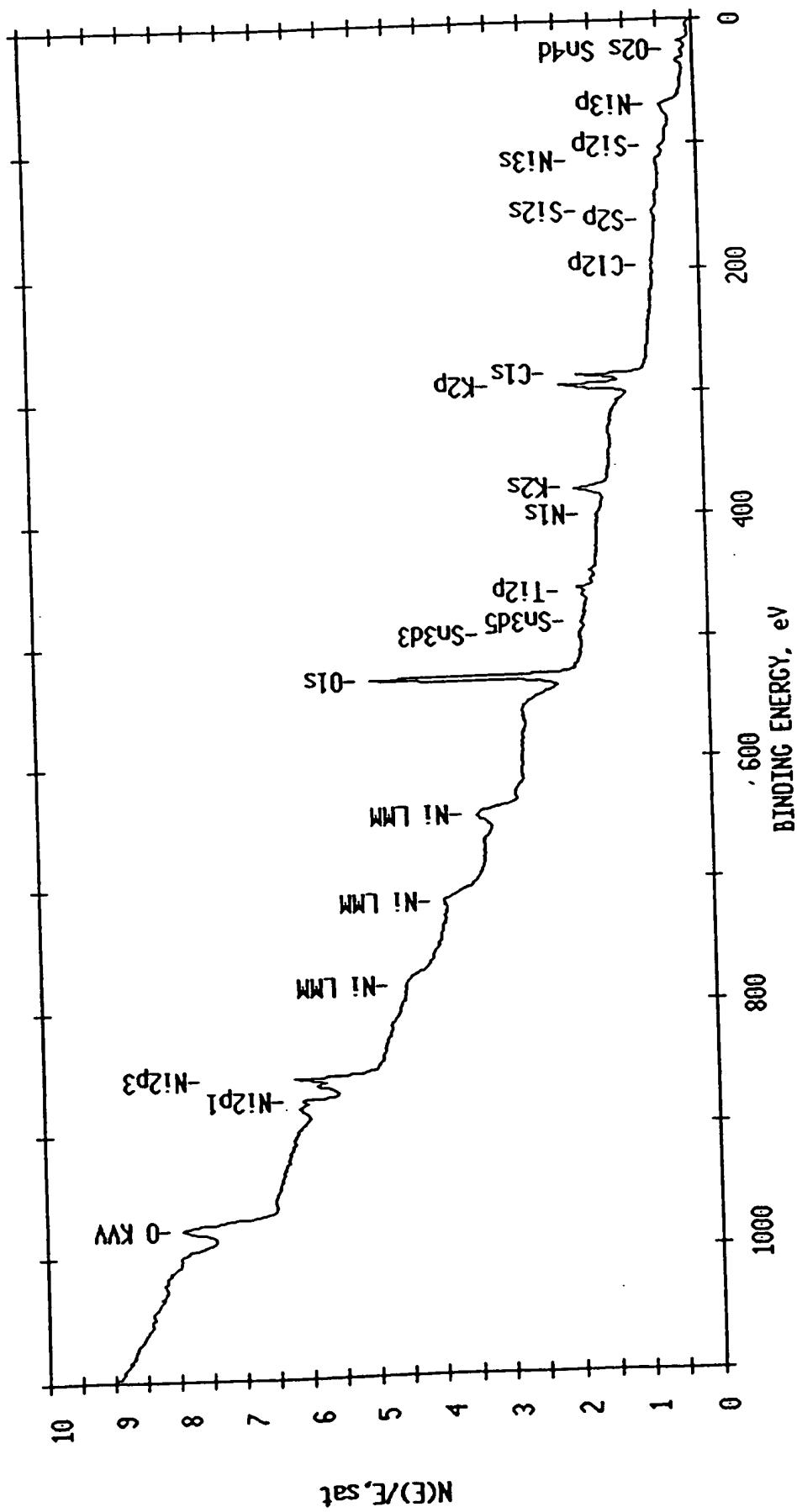
■ Counts 50692 Counts/Sec

■ 486

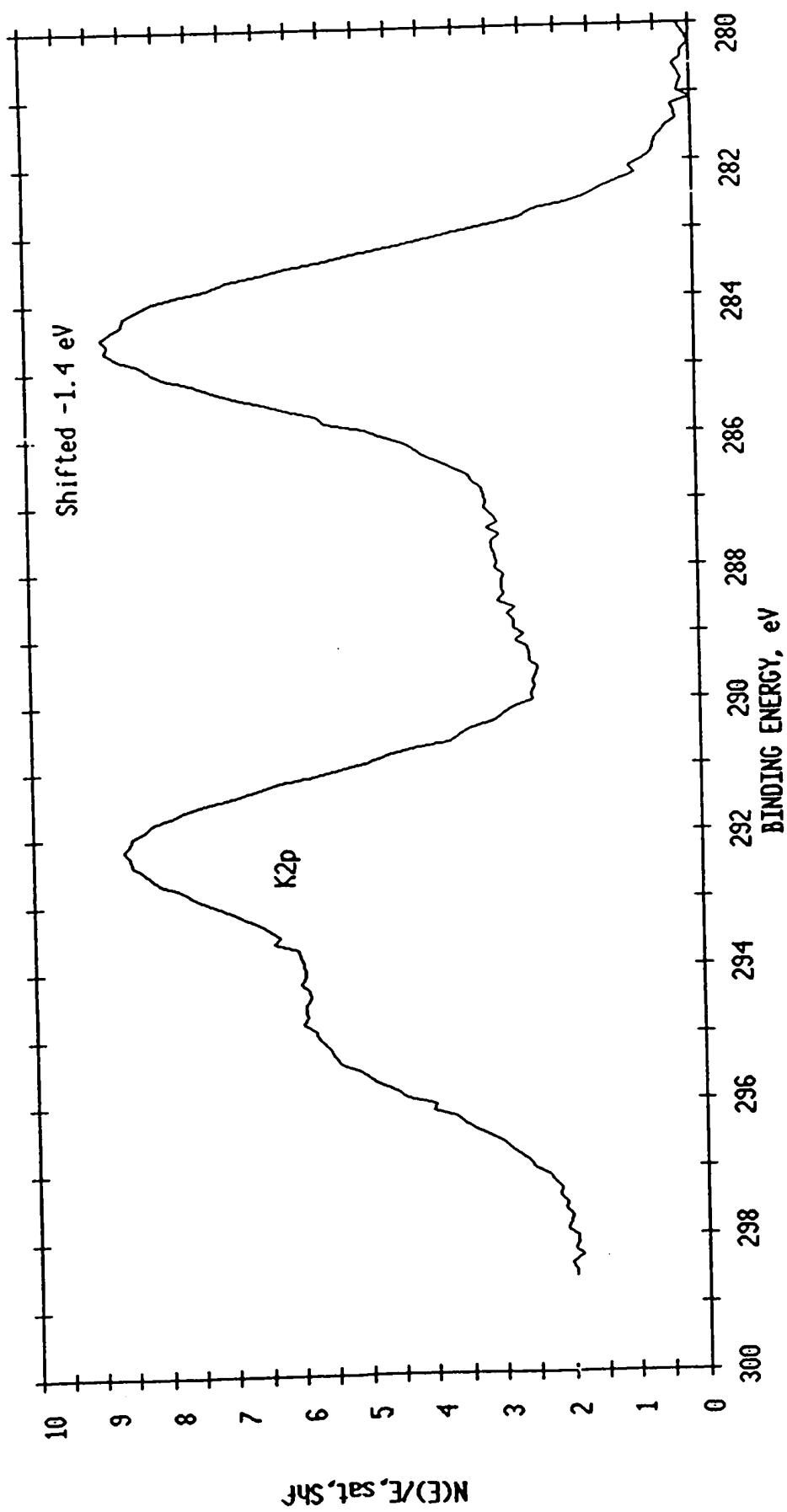
N(E)/E, sat, small, shift



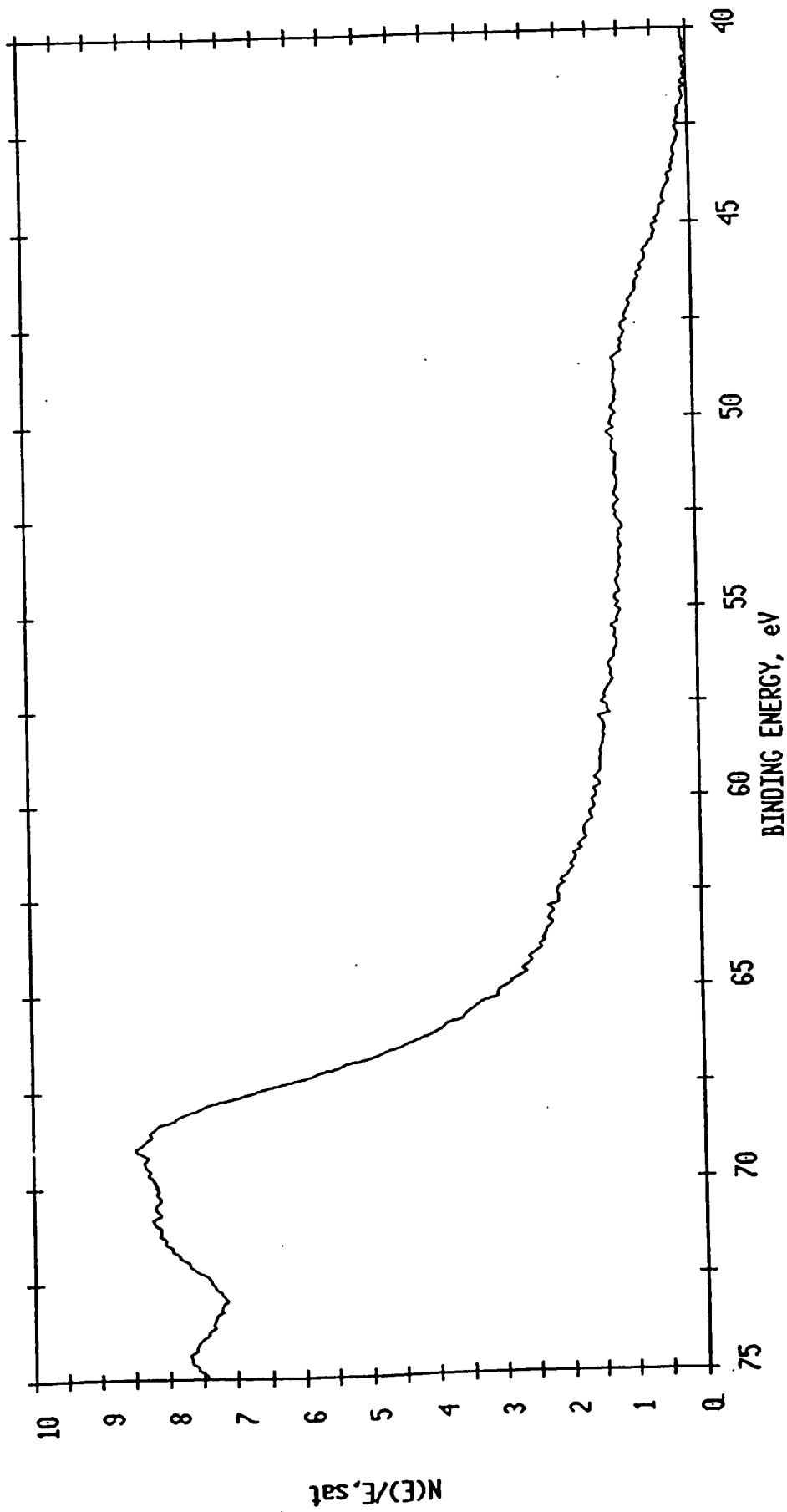
ESCA SURVEY 11/22/93 ANGLE= 15 deg ACQ TIME=29.36 min
FILE: Nitest31 Ni foil treated for 4 days (same foil as 24 hr treat.)
SCALE FACTOR= 44.544 k c/s, OFFSET= 4.987 k c/s PASS ENERGY=178.950 eV Al 400 μ



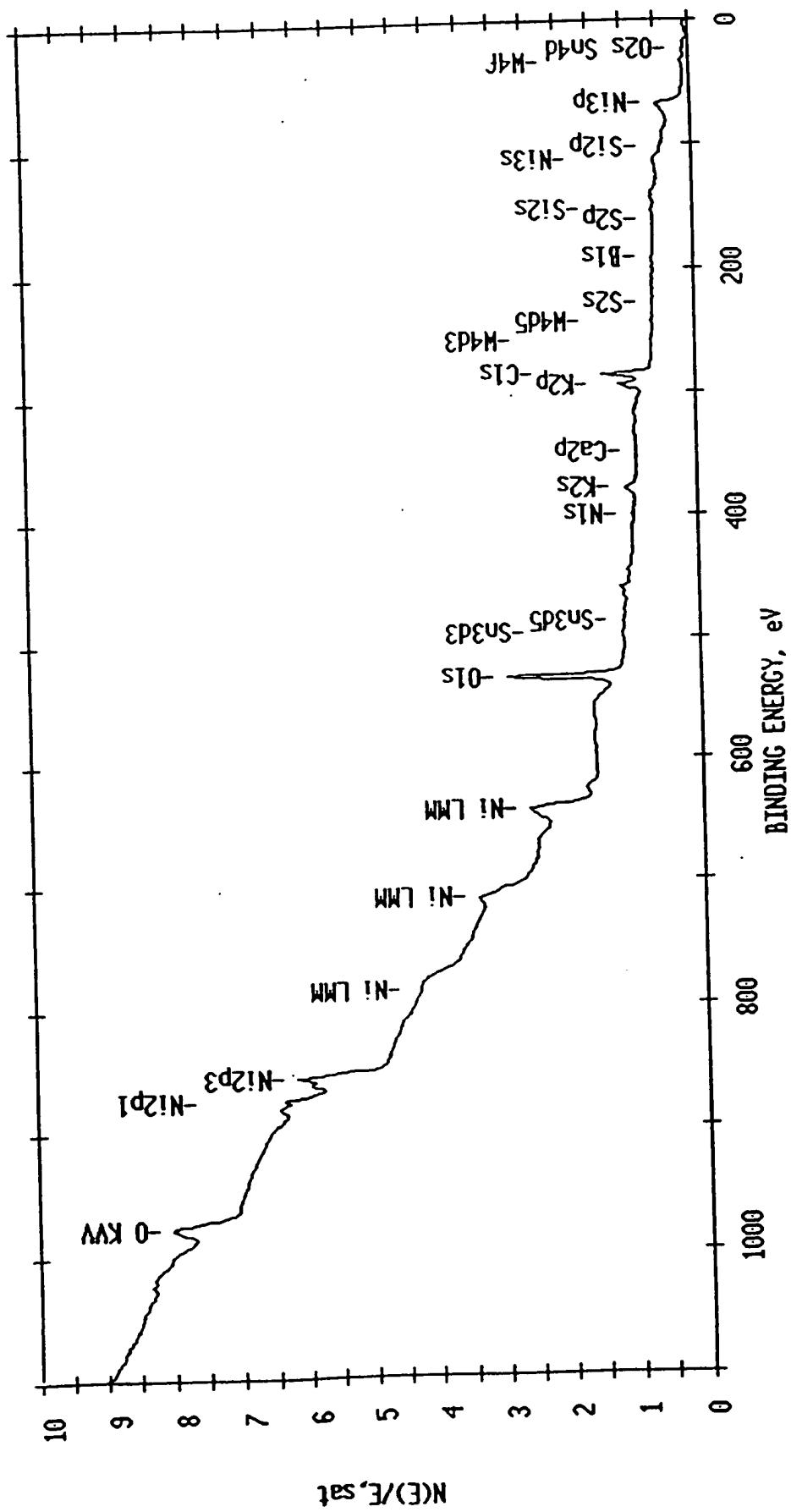
ESCA MULTIPLEX 11/22/93 EL=C1 REG 1 ANGLE= 15 deg ACQ TIME=1.67 min
FILE: Ni test30 Ni foil treated for 4 days (same foil as 24 hr treat.)
SCALE FACTOR= 4.250 k c/s, OFFSET= 25.454 k c/s PASS ENERGY=143.050 eV Al 400 W



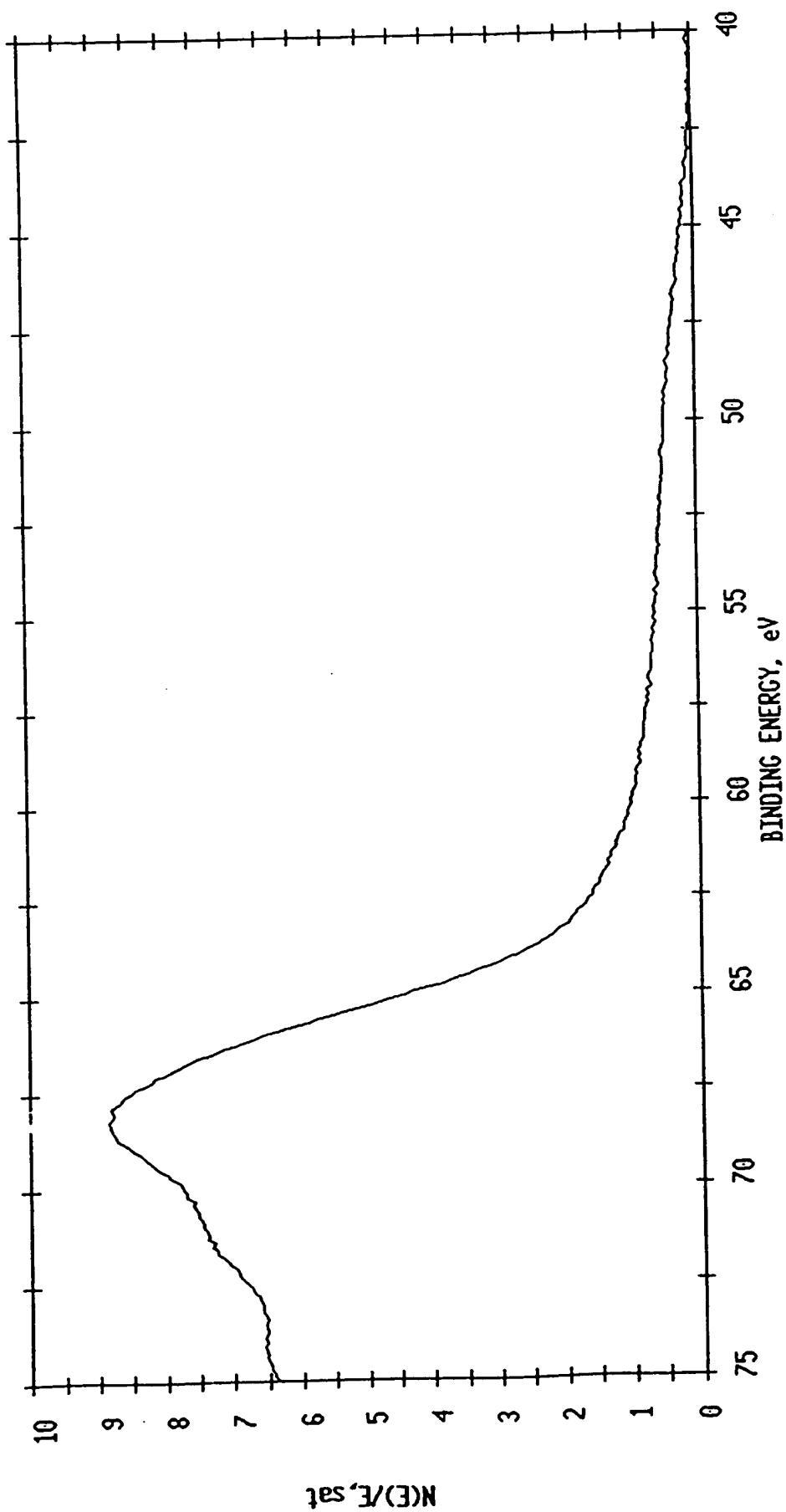
ESCA MULTIPLEX 11/22/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=46.80 min
FILE: Nitest30 Ni foil treated for 4 days (same foil as 24 hr treat.)
SCALE FACTOR= 1.109 k c/s, OFFSET= 7.432 k c/s PASS ENERGY=143.050 eV Al 400 W



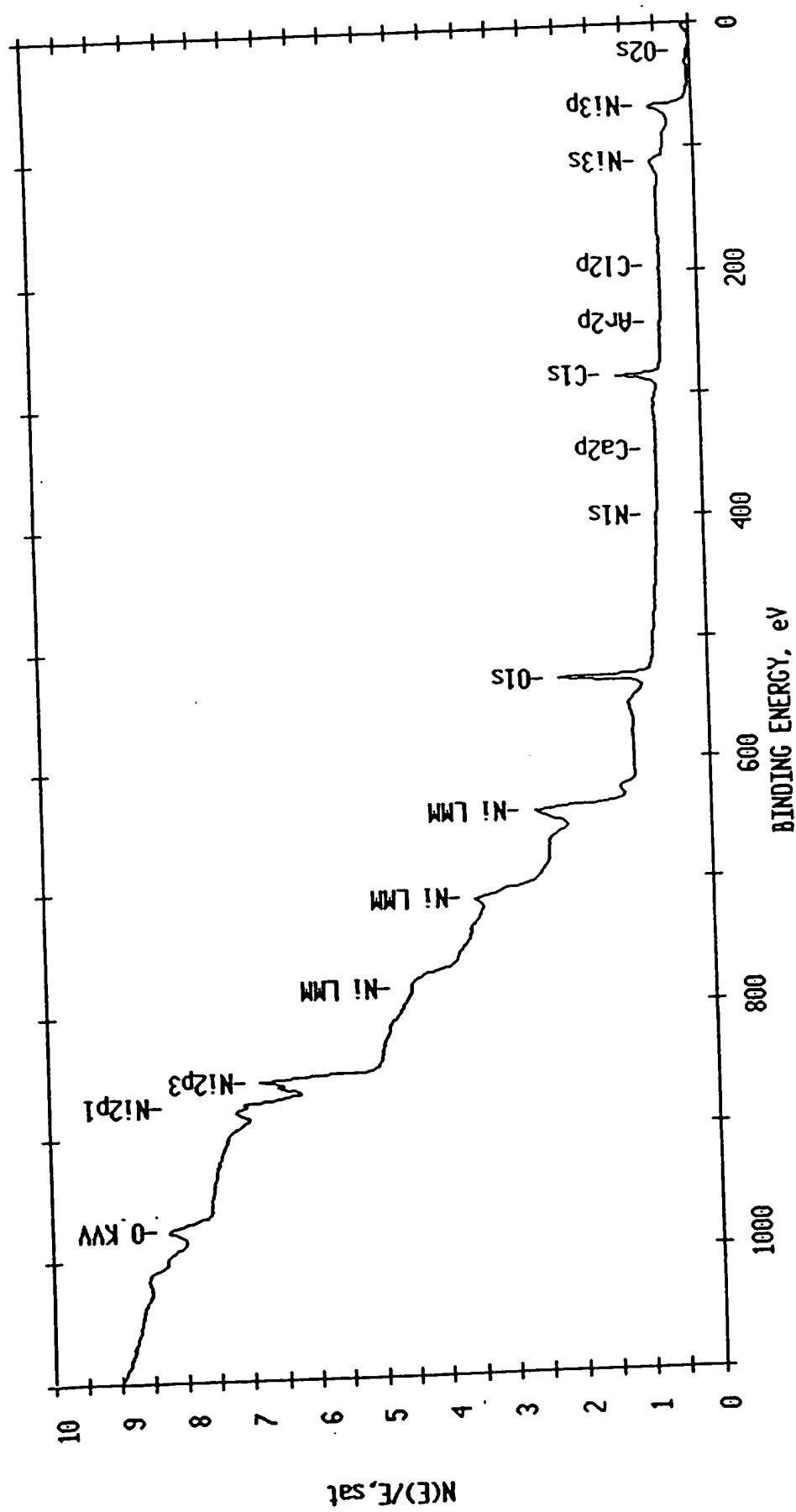
ESCA SURVEY 11/19/93 ANGLE= 15 deg ACQ TIME=29.36 min
FILE: Nitest26 Ni foil treated in lab for 24 hr. As received.
SCALE FACTOR= 64.347 k c/s, OFFSET= 8.234 k c/s PASS ENERGY=178.950 eV Al 400 W



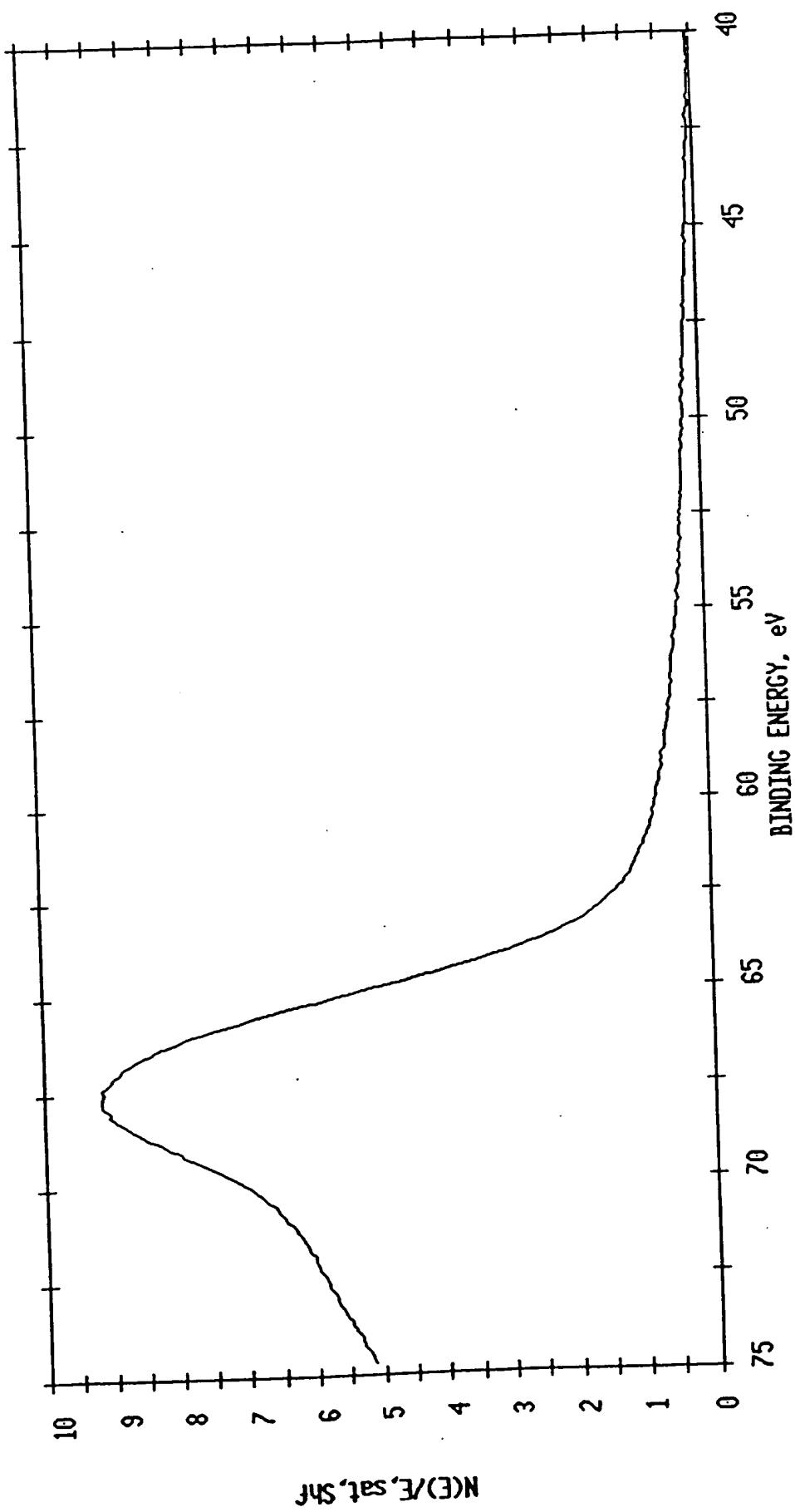
ESCA MULTIPLEX 11/19/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=84.83 min
FILE: Nitest25 Ni foil treated in lab for 24 hr. As received.
SCALE FACTOR= 1.920 k c/s, OFFSET= 8.515 k c/s PASS ENERGY=143.050 eV AI 400 W



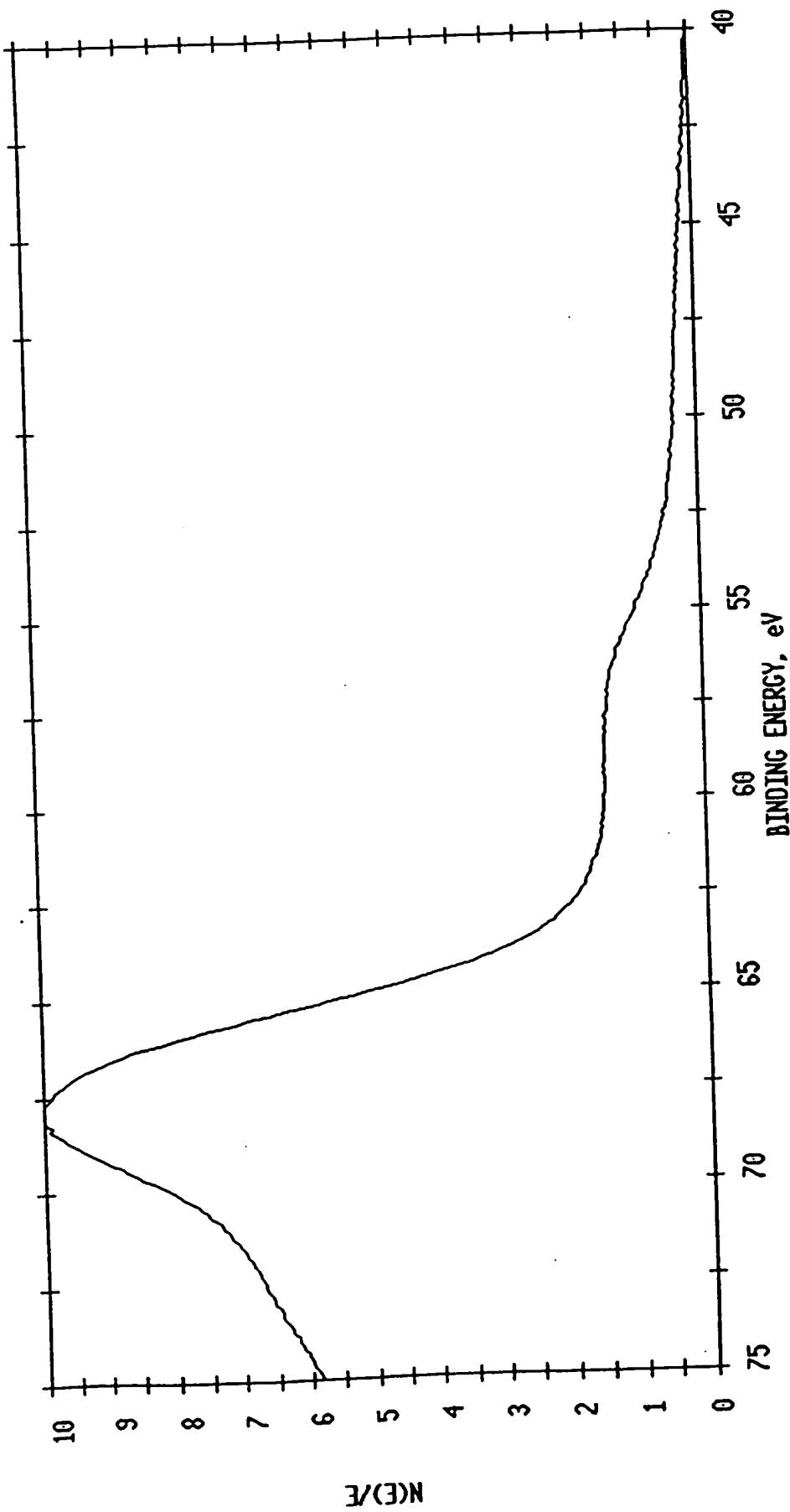
ESCA SURVEY 11/18/93 ANGLE= 15 deg ACQ TIME=29.36 min
FILE: Nitest23 Ni foil untreated. as received.
SCALE FACTOR= 80.815 k c/s, OFFSET= 11.386 k c/s PASS ENERGY=178.350 eV Al 400 μ



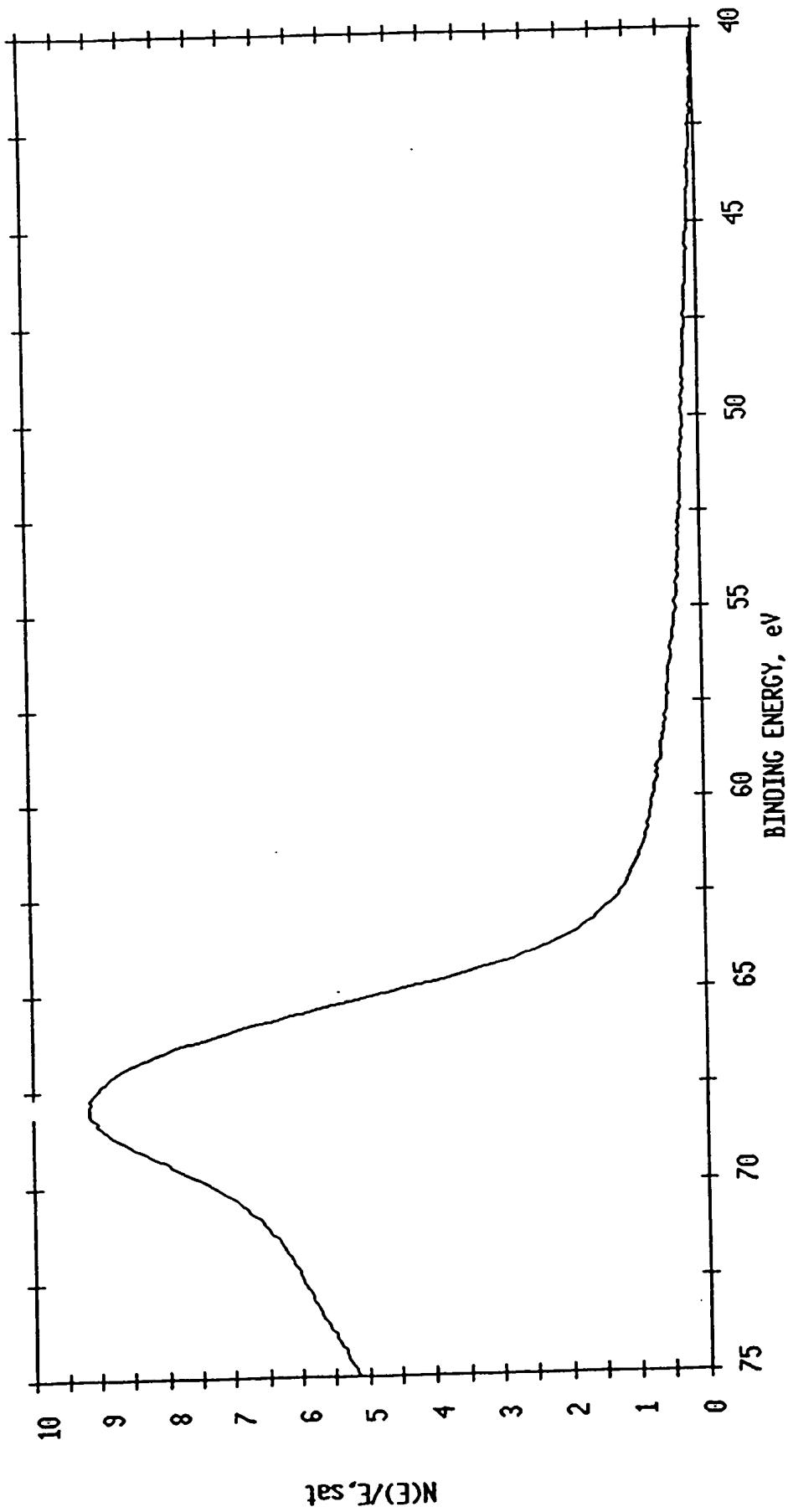
ESCA MULTIPLEX 11/18/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=76.05 min
FILE: Nitest22 Ni foil untreated. as received.
SCALE FACTOR= 3.401 K c/s, OFFSET= 9.545 K c/s PASS ENERGY=143.050 eV Al 400 W



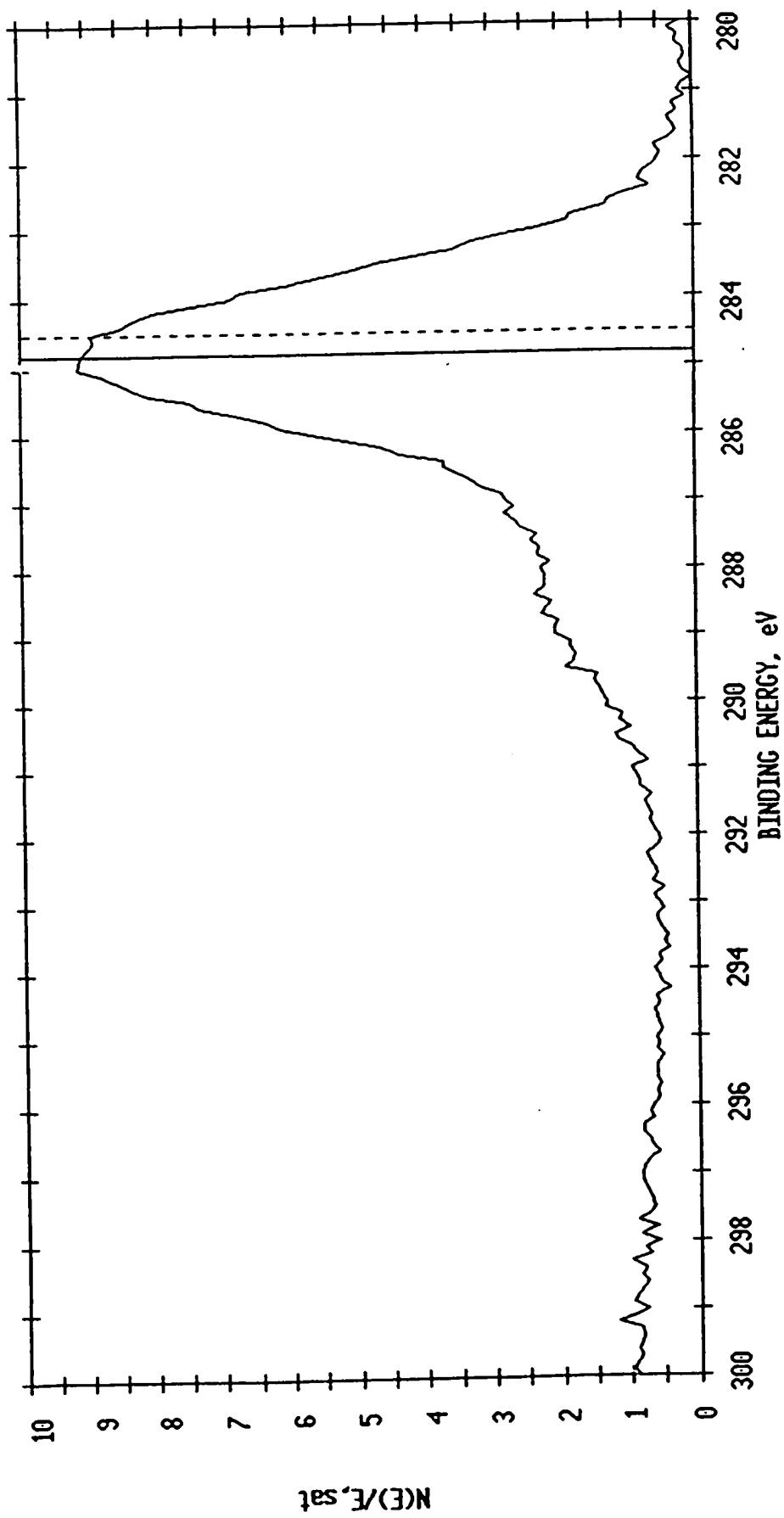
ESCA MULTIPLEX 11/18/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=76.05 min
FILE: Nitest22 Ni foil untreated. as received.
SCALE FACTOR= 3.278 k c/s, OFFSET= 10.778 k c/s PASS ENERGY=143.050 eV Al 400 μ



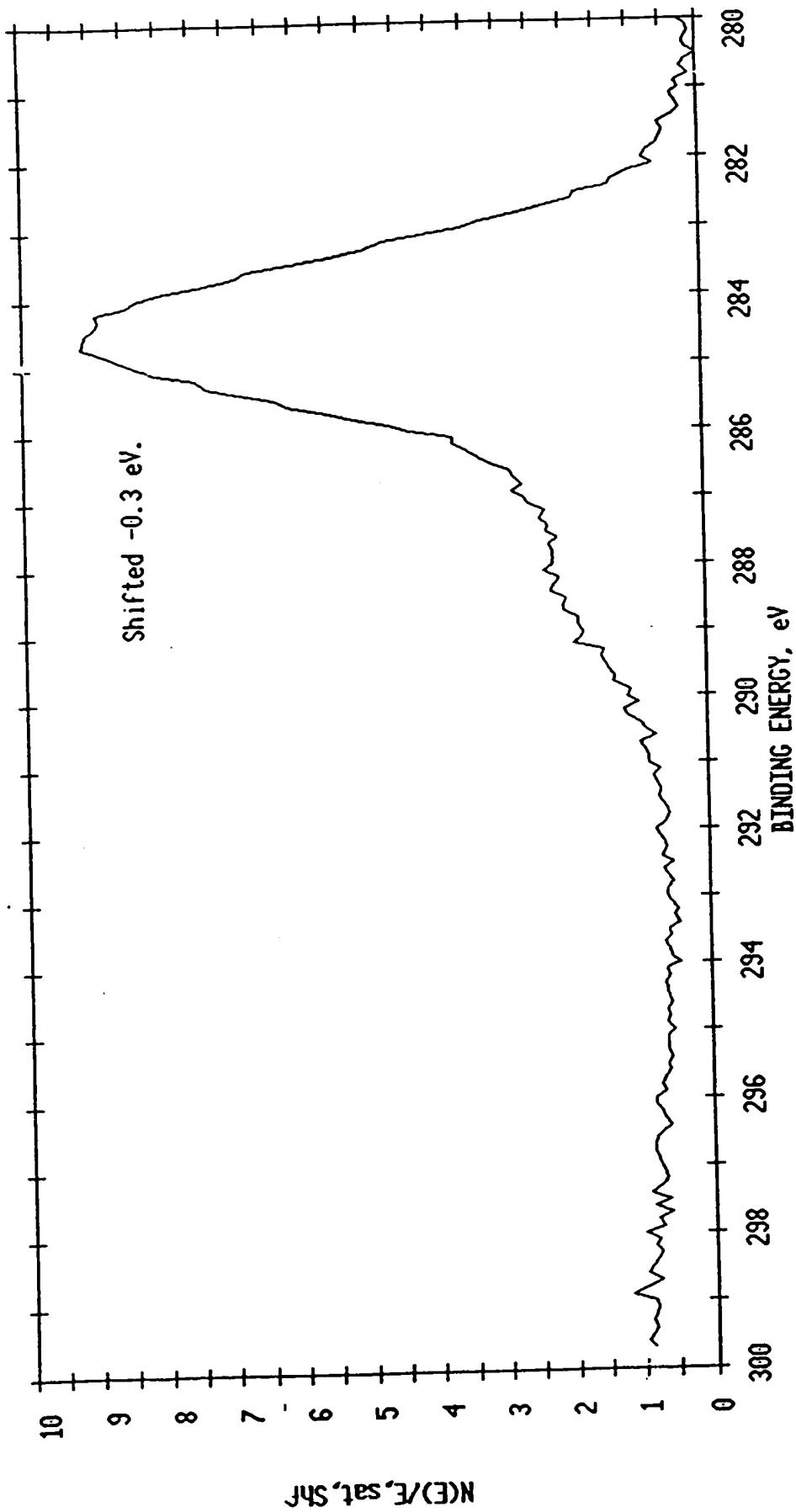
ESCA MULTIPLEX 11/18/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=76.05 min
FILE: Nitest22 Ni foil untreated. as received.
SCALE FACTOR= 3.401 K c/s, OFFSET= 9.545 K c/s PASS ENERGY=143.050 eV AI 400 W



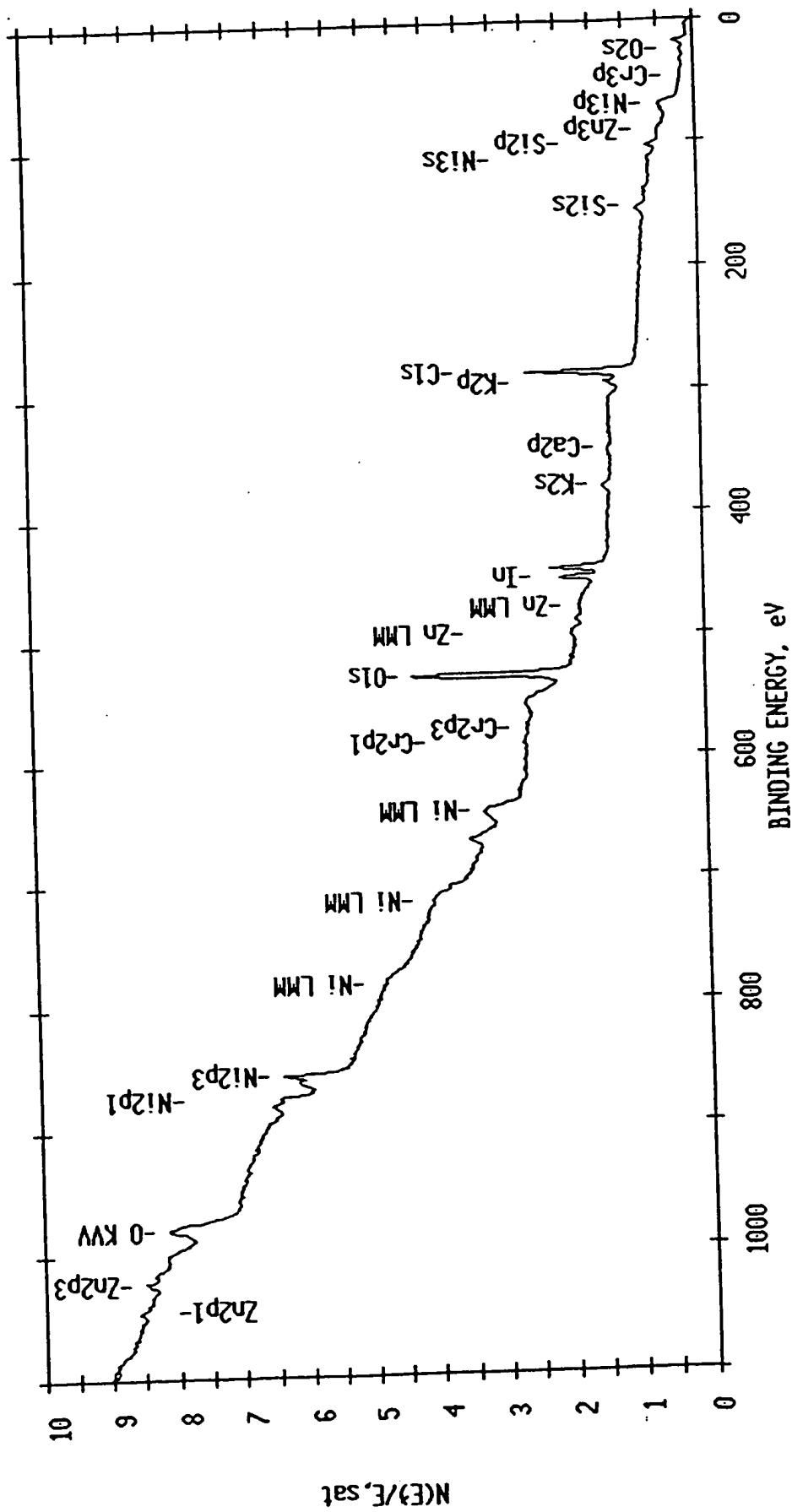
a Initial Energy Point
b Shifted Energy Point
c Offset



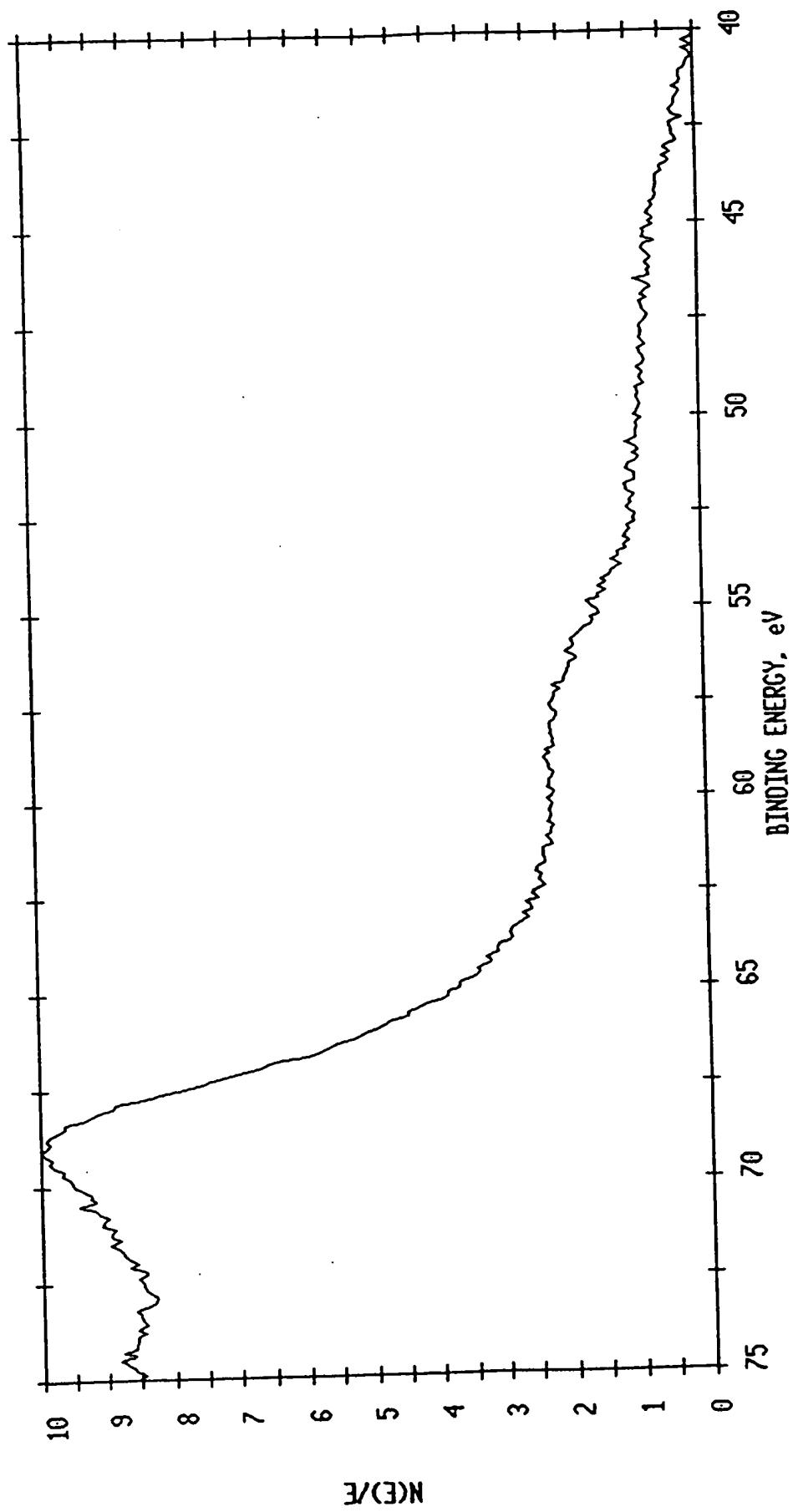
ESCA MULTIPLEX 11/18/93 EL=C1 REG 1 ANGLE= 15 deg ACO TIME=0.84 min
FILE: Nitest22 Ni foil untreated. as received.
SCALE FACTOR= 5.007 k c/s, OFFSET= 37.388 k c/s PASS ENERGY=143.050 eV A1 400 W



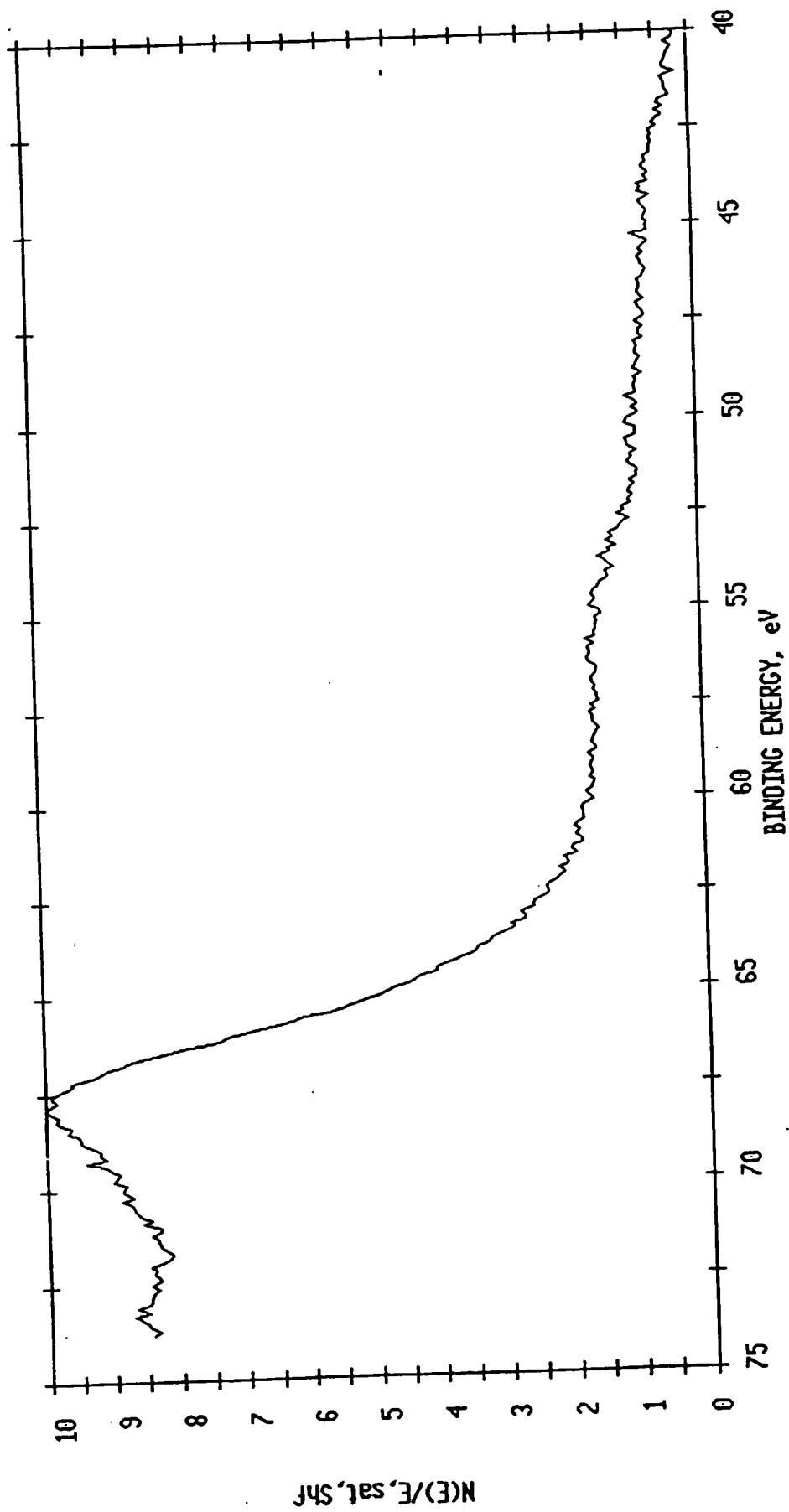
ESCA SURVEY 11/18/93 ANGLE= 15 deg ACQ TIME=29.36 min
FILE: Nitest21 Ni wire processed in lab. as received.
SCALE FACTOR= 12.496 k c/s. OFFSET= 1.542 k c/s PASS ENERGY=178.950 eV Al 400 μ



ESCA MULTIPLEX 11/18/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=67.28 min
FILE: Nitest20 Ni wire processed in lab. as received.
SCALE FACTOR= 0.301 k c/s, OFFSET= 2.742 k c/s PASS ENERGY=143.050 eV Al 400 W



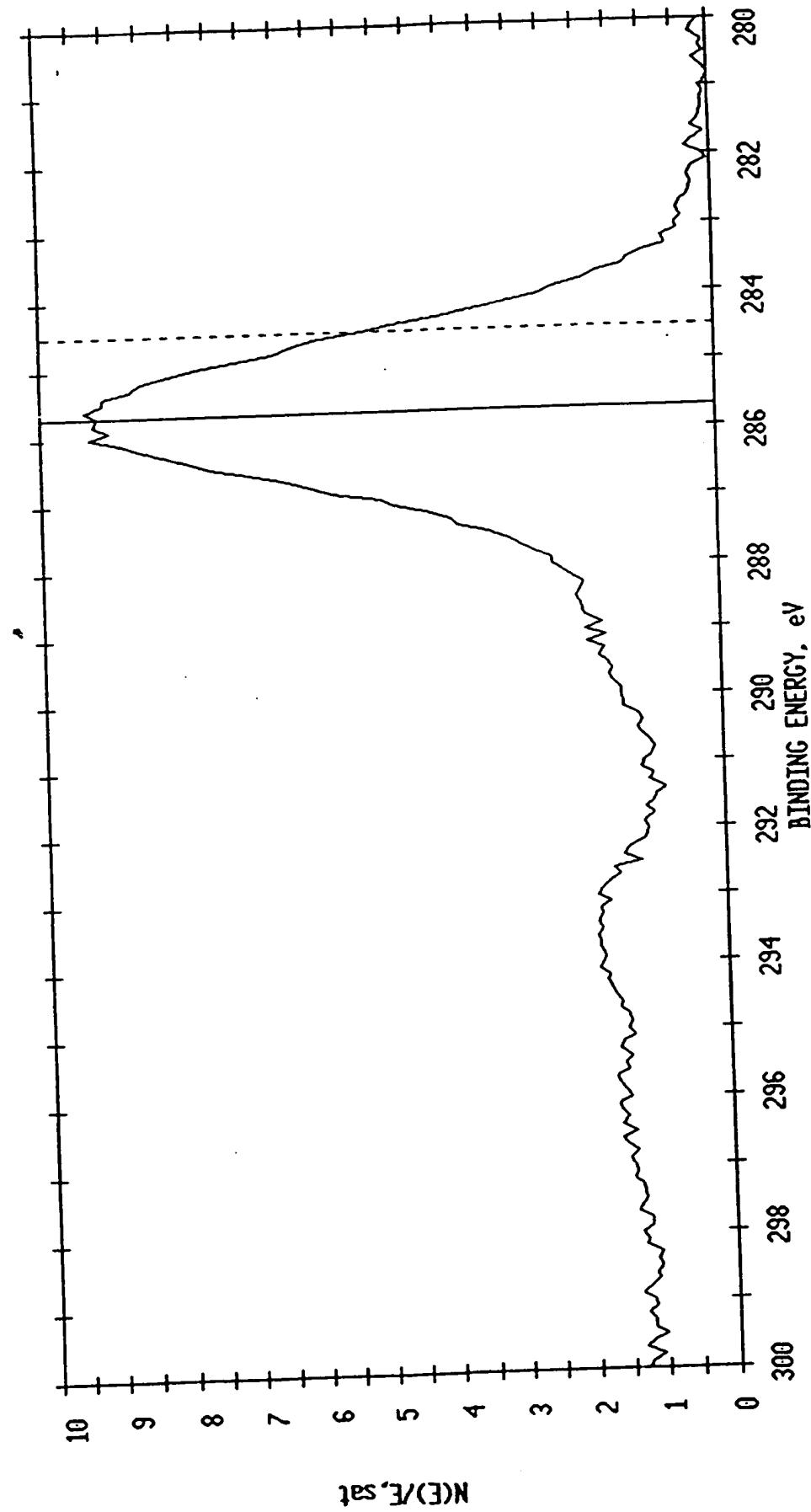
ESCA MULTIPLEX 11/18/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=67.28 min
FILE: Nitest20 Ni wire processed in lab. as received.
SCALE FACTOR= 0.280 k c/s, OFFSET= 2.436 k c/s PASS ENERGY=143.050 eV A1 400 μ



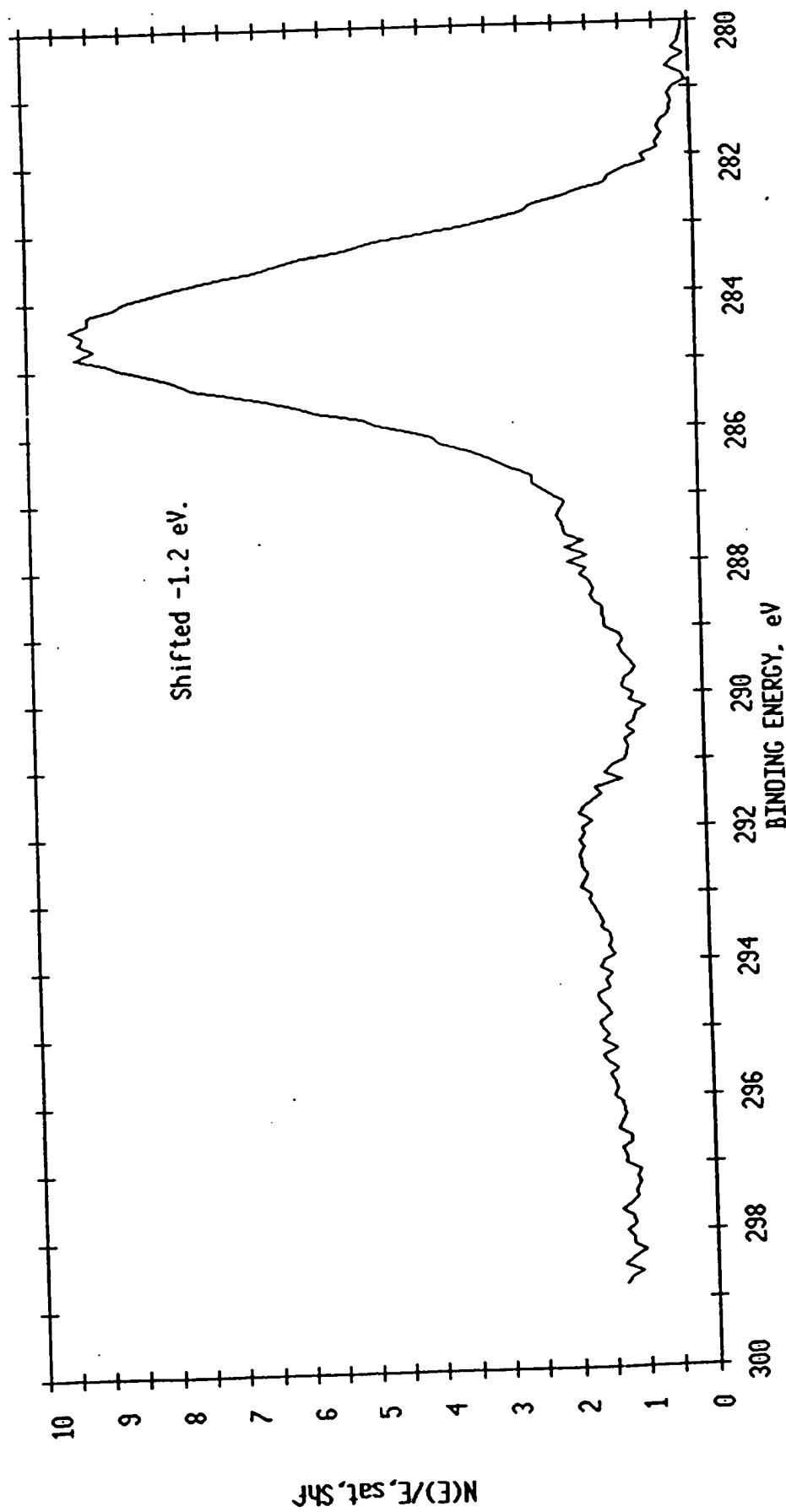
N(E)/E, sat, shf

File N:\tmt\20

a Initial Energy Point
Shift 285.700
b Shifted Energy Point
284.500
c Offset -1.200



ESCA MULTIPLEX 11/18/93 EL=C1 REC 1 ANGLE= 15 deg ACO TIME=1.67 min
FILE: Ni test20 Ni wire processed in lab. as received.
SCALE FACTOR= 1.789 k c/s, OFFSET= 8.206 k c/s PASS ENERGY=143.050 eV Al 400 μ

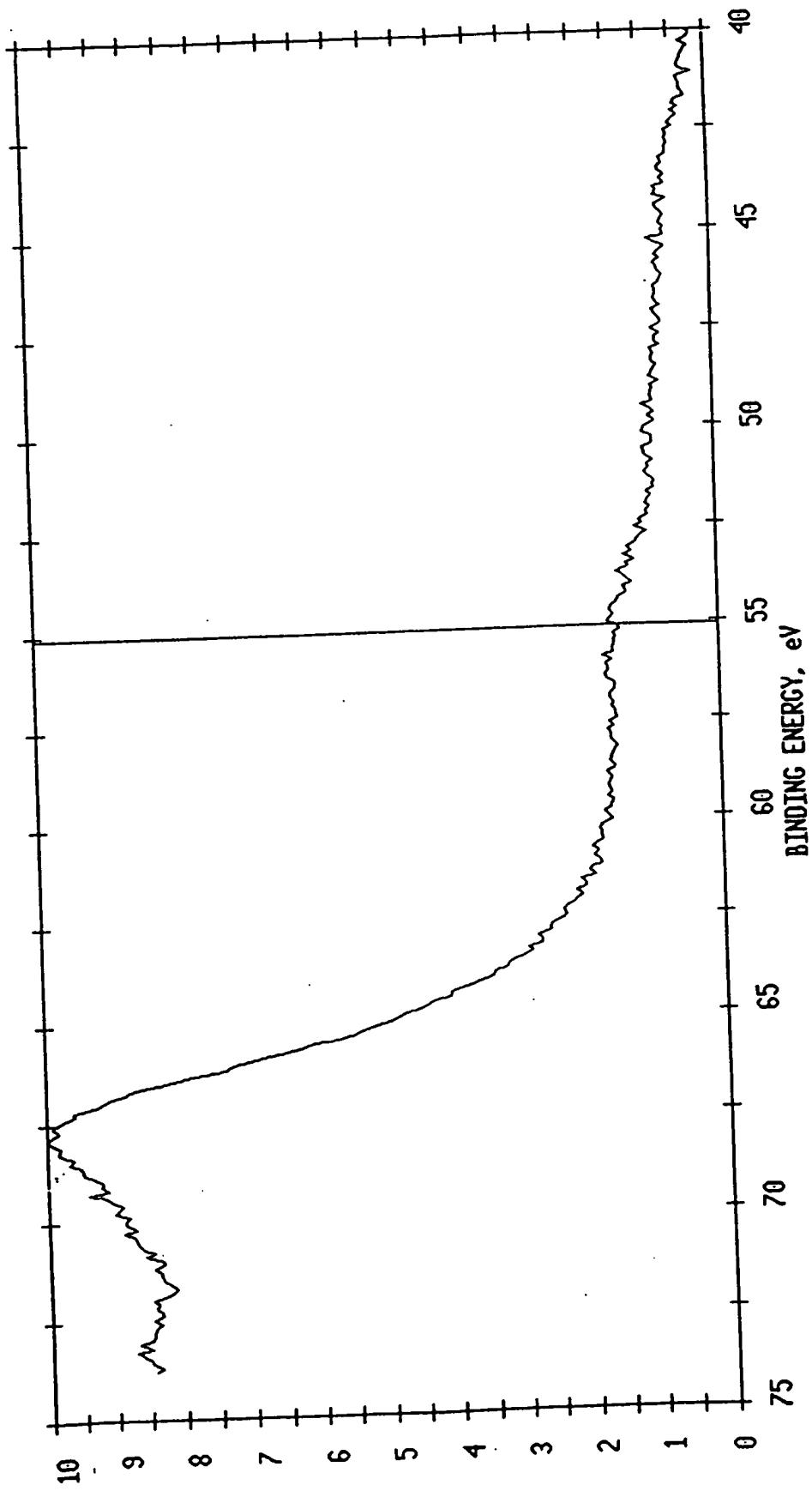


Cursor

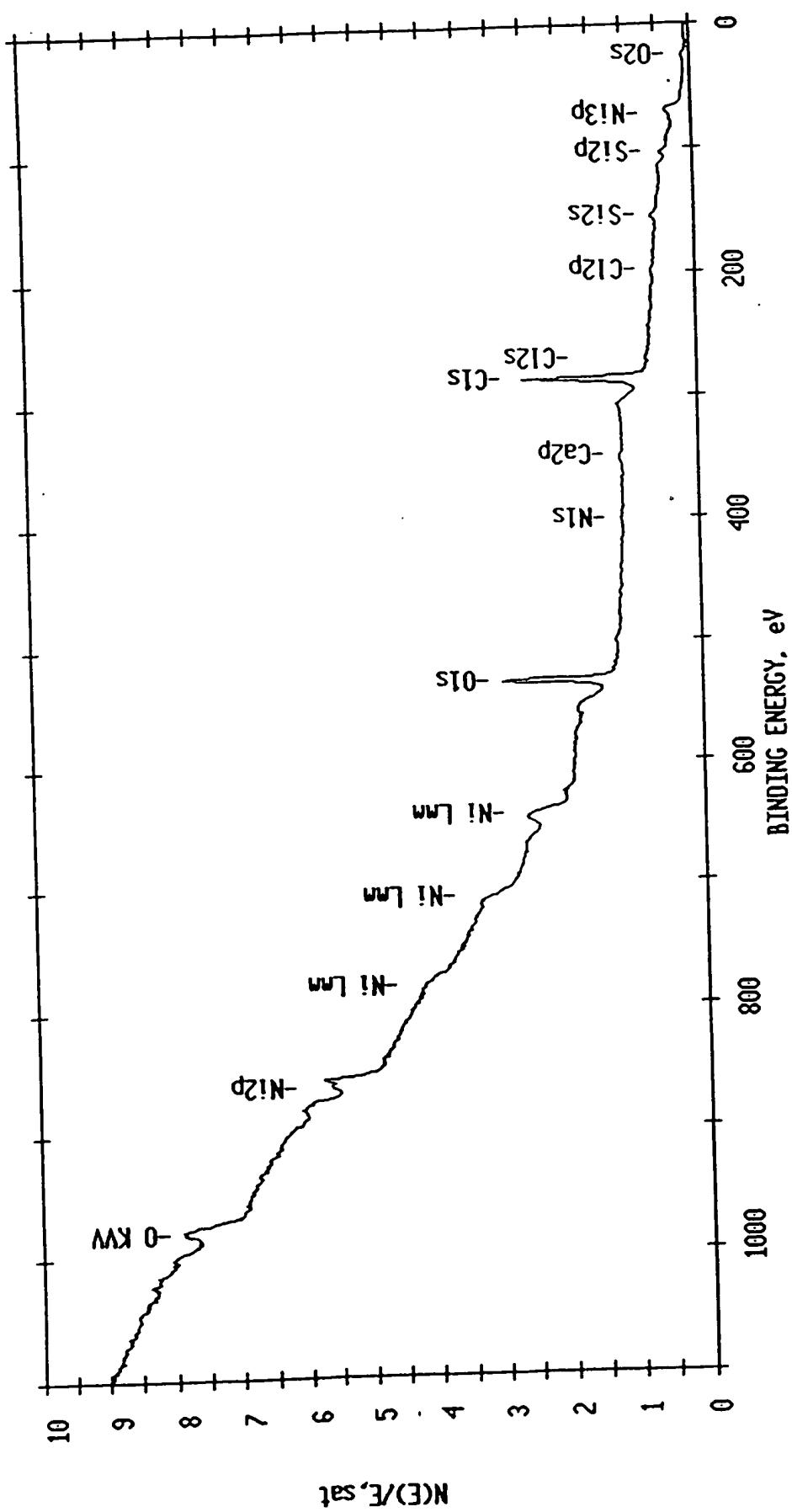
Counts ■ 32758 Counts/Sec ■ 2846

■ Energy (eV) ■ 55.100

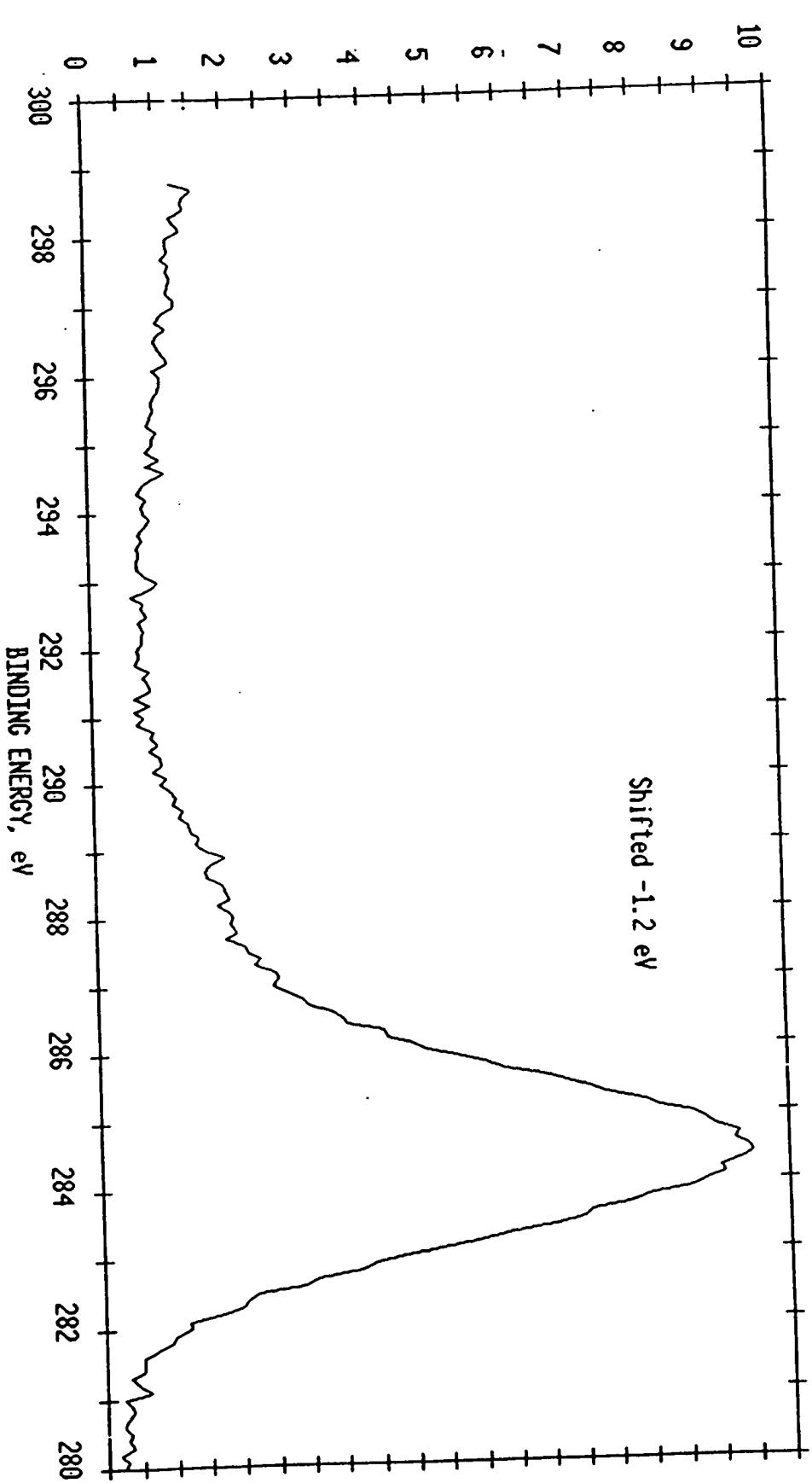
■ N(E)/E, sat, Shf



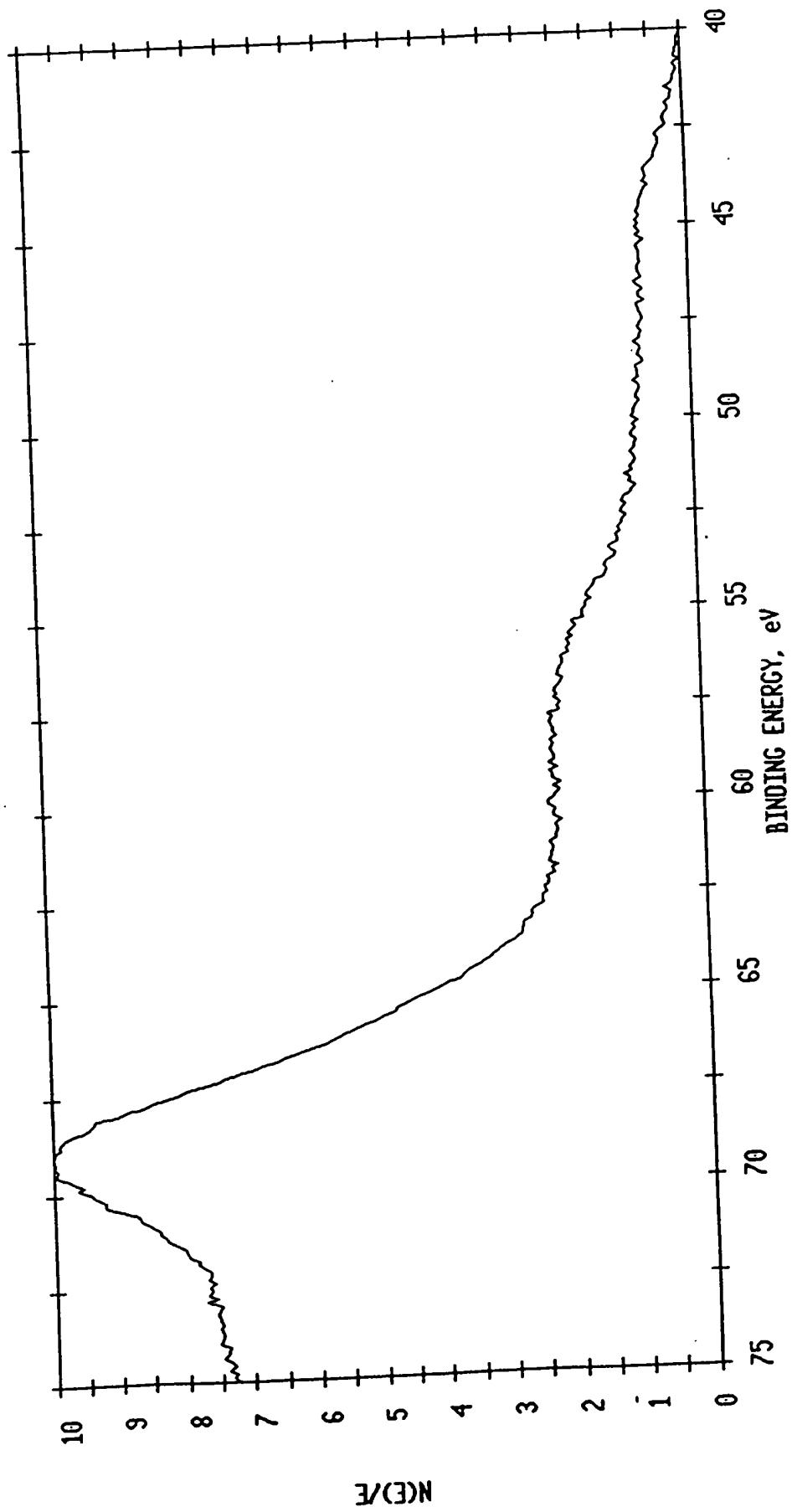
ESCA SURVEY 11/22/93 ANGLE= 15 deg ACQ TIME=29.36 min
FILE: Nitest33 2nd Ni wire treated prior to ITC.
SCALE FACTOR= 11.123 k c/s. OFFSET= 1.299 k c/s PASS ENERGY=178.950 eV Al 400 W



ESCA MULTIPLEX 11/22/93 EL=C1 REC 1 ANGLE= 15 deg ACC TIME=1.67 min
FILE: Nitest32 2nd Ni wire treated prior to IRC.
SCALE FACTOR= 1.491 k c/s, OFFSET= 5.842 k c/s PASS ENERGY=143.050 eV Al 400 μ



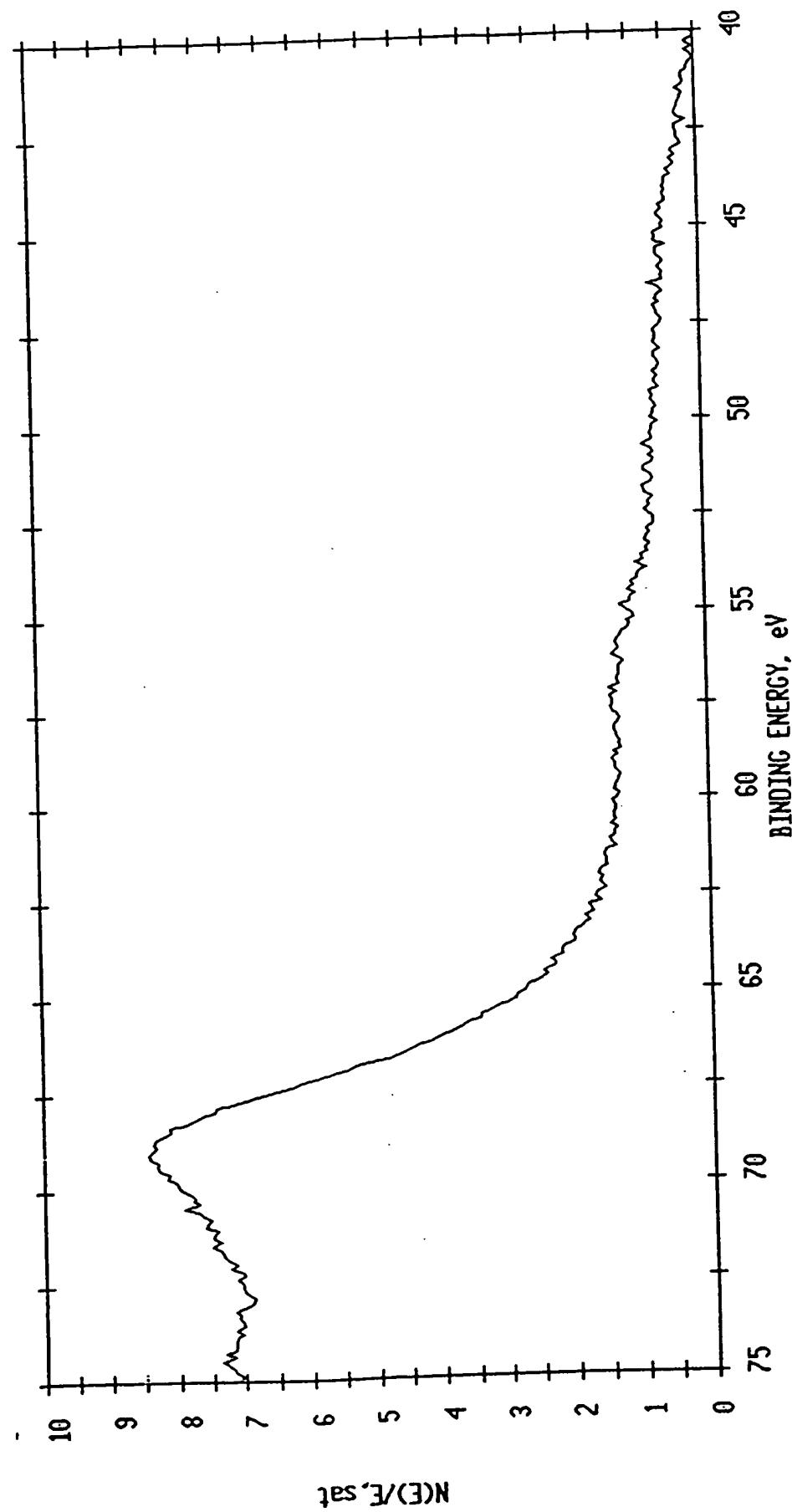
ESCA MULTIPLEX 11/22/93 EL= REG 2 ANGLE= 15 deg ACO TIME=96.53 min
FILE: Nitest32 2nd Ni wire treated prior to IRC.
SCALE FACTOR= 0.254 k c/s, OFFSET= 1.784 k c/s PASS ENERGY=143.050 eV Al 400 W



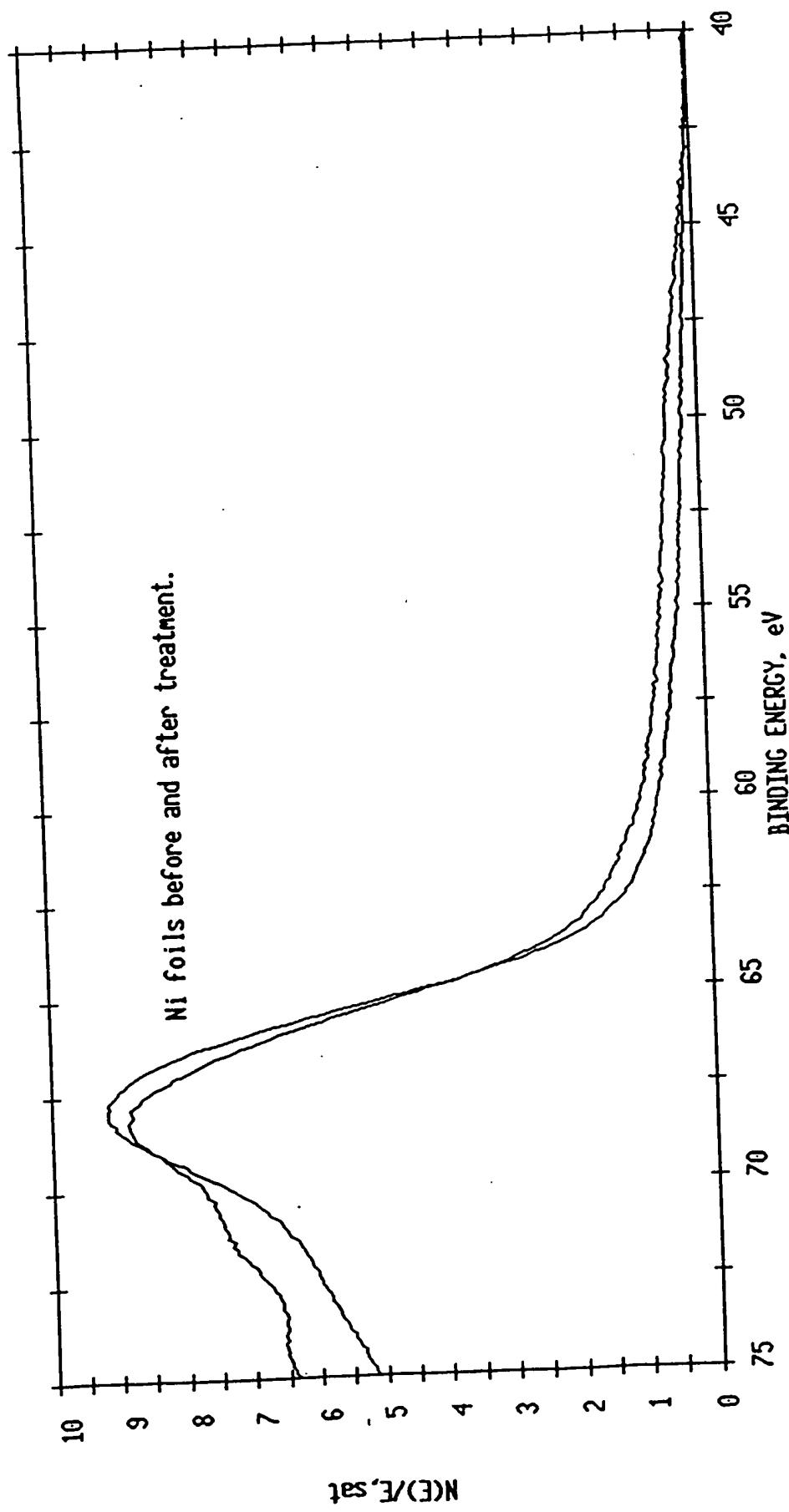
ESCA MULTIFLEX 11/18/93 EL= REC 2 ANGLE= 15 deg ACO TIME=67.28 min

FILE: Nitest20 Ni wire processed in lab. as received.

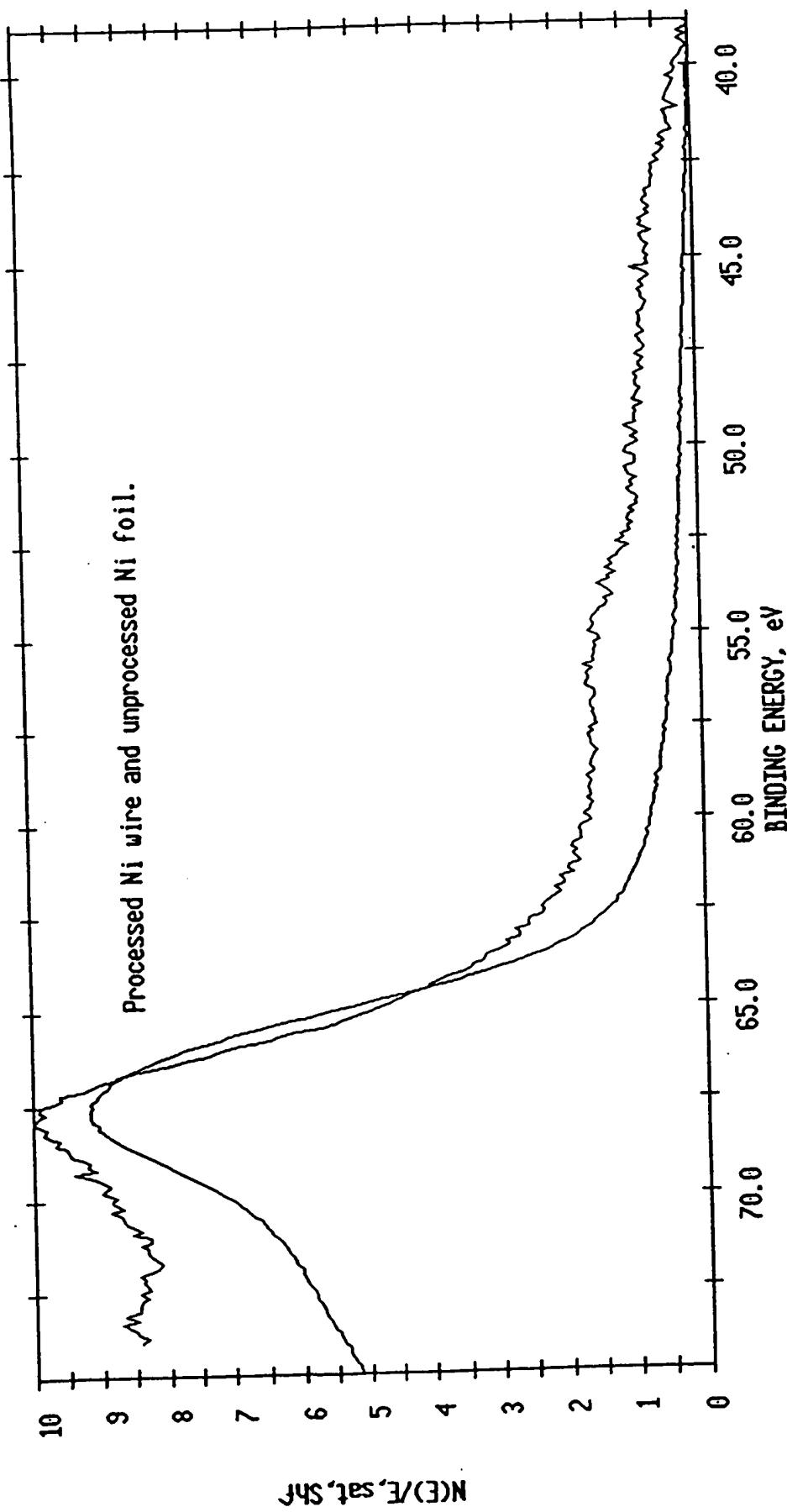
SCALE FACTOR= 0.331 k c/s, OFFSET= 2.436 k c/s PASS ENERGY=143.050 eV Al 400 W



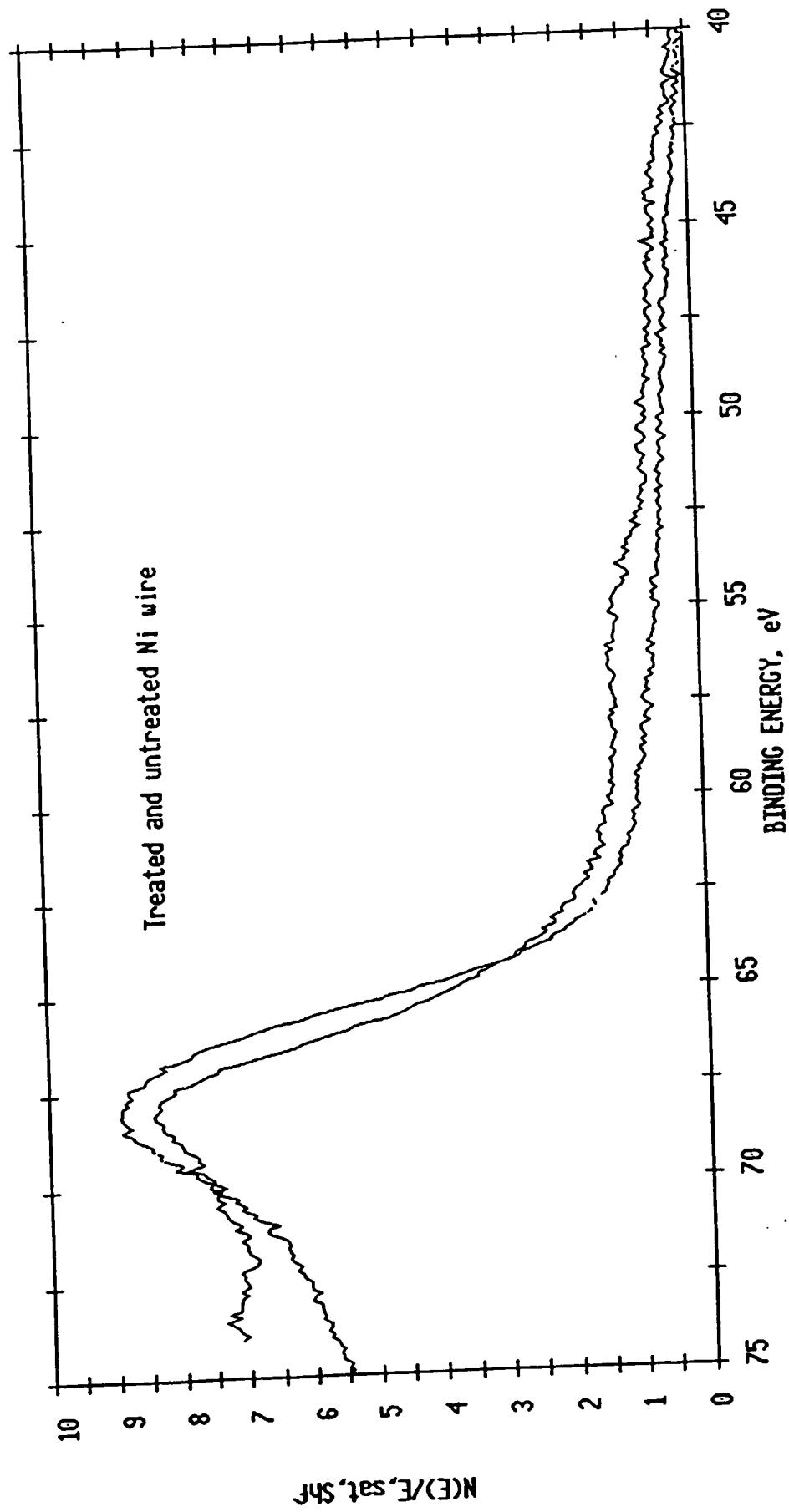
ESCA MULTIPLEX 11/19/93 EL= REC 2 ANGLE= 15 deg ACO TIME=84.83 min
FILE: Nitest25 Ni foil treated in lab for 24 hr. As received.
SCALE FACTOR= 1.920 k c/s, OFFSET= 8.515 k c/s PASS ENERGY=143.050 eV A1 400 W



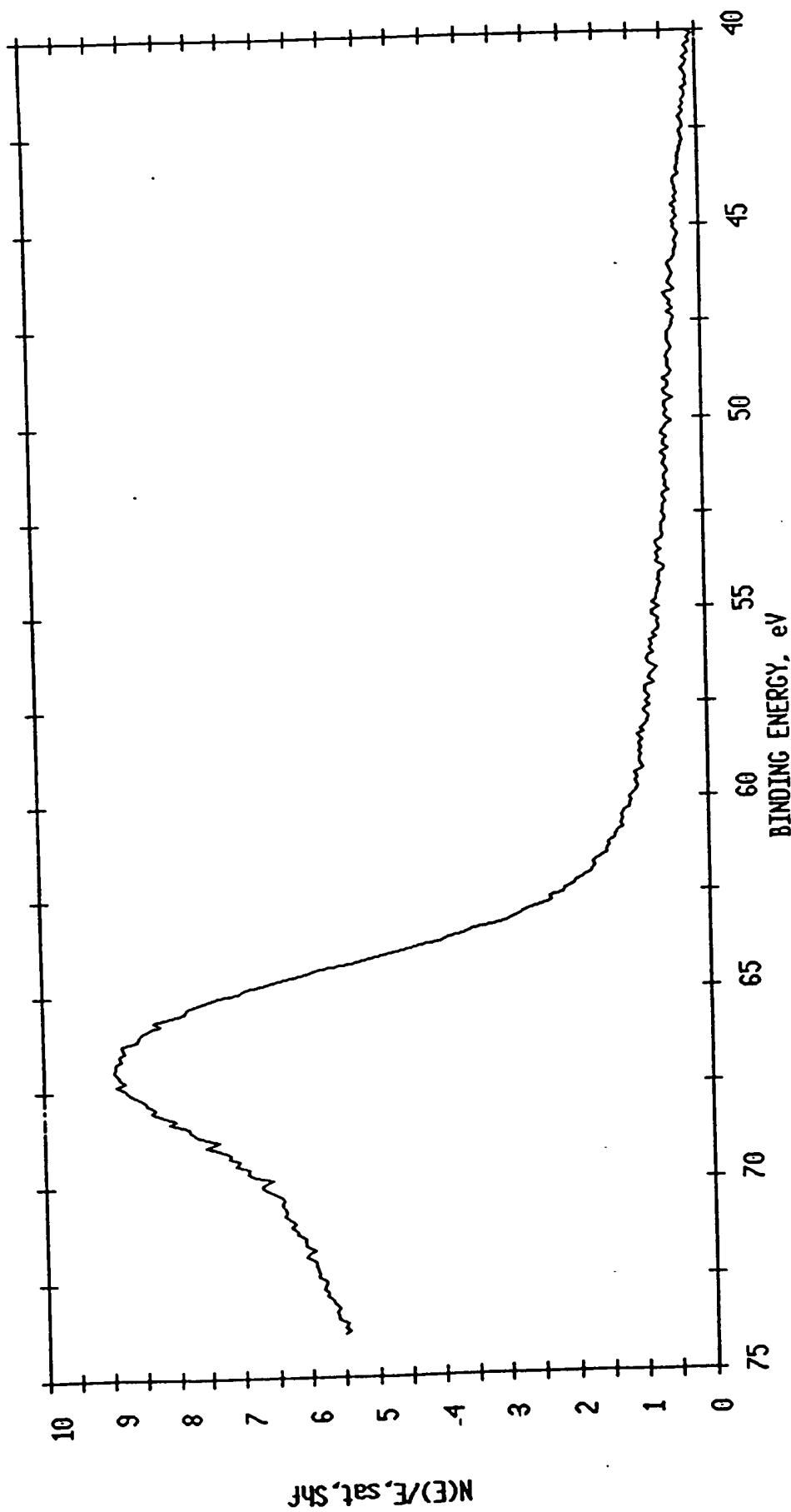
ESCA MULTIPLEX 11/18/93 EL= REG 2 ANGLE= 15 deg ACO TIME=76.05 min
FILE: Nitest22 Ni foil untreated. as received.
SCALE FACTOR= 3.401 k c/s, OFFSET= 9.545 k c/s, PASS ENERGY=143.050 eV A1 400 W



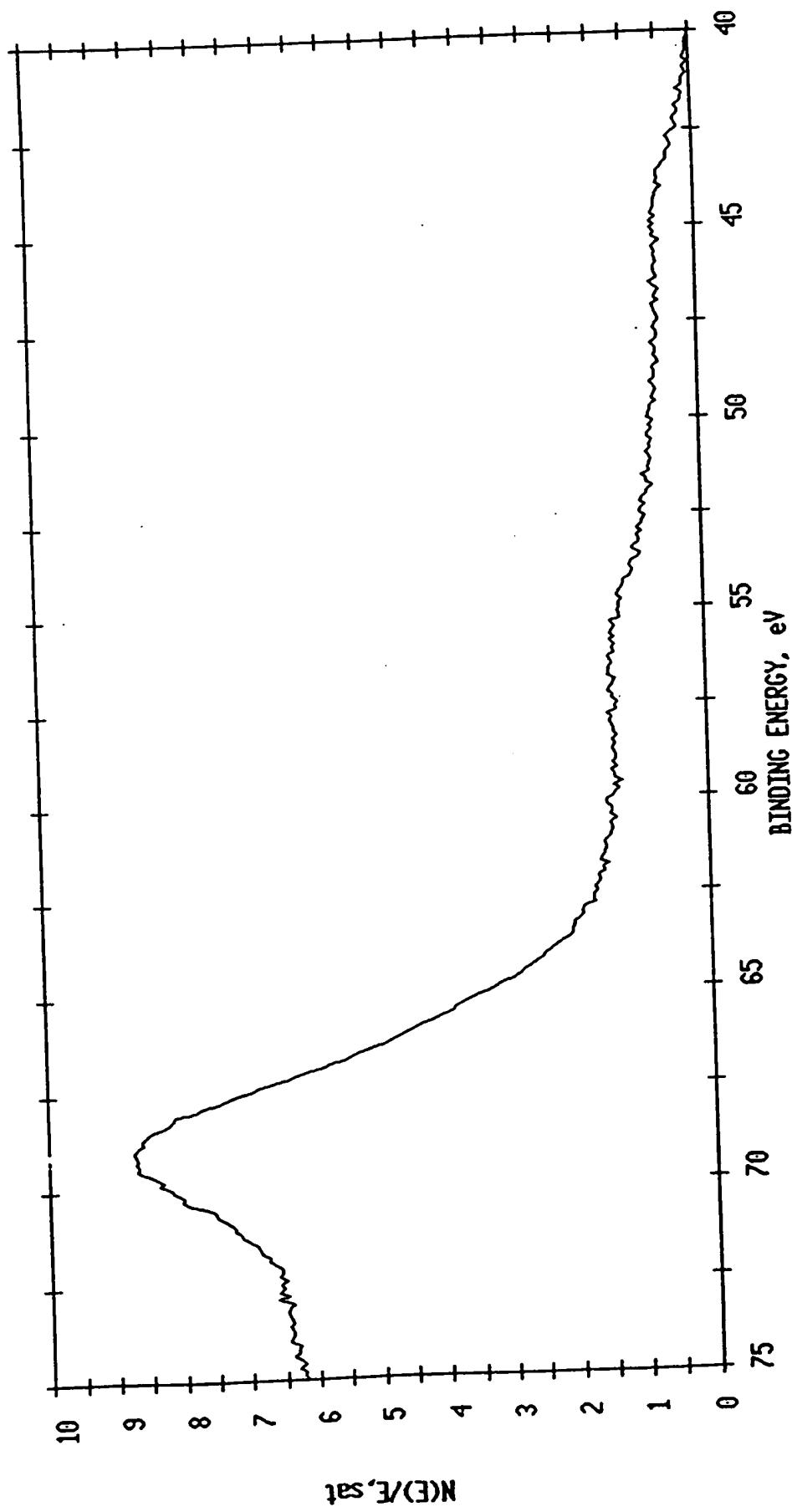
ESCA MULTIPLEX 11/18/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=67.28 min
FILE: Nitest20 Ni wire processed in lab. as received.
SCALE FACTOR= 0.331 K c/s, OFFSET= 2.436 K c/s PASS ENERGY=143.050 eV AI 400 μ



ESCA MULTIPLEX 11/19/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=61.43 min
FILE: Nitest27 Ni wire untreated (base line) using Al X-Ray's.
SCALE FACTOR= 0.326 k c/s, OFFSET= 1.491 k c/s PASS ENERGY=143.050 eV Al 400 W



ESCA MULTIPLEX 11/22/93 EL= REG 2 ANGLE= 15 deg ACQ TIME=96.53 min
FILE: Nitest32 2nd Ni wire treated prior to IRC.
SCALE FACTOR= 0.274 K c/s, OFFSET= 1.580 K c/s PASS ENERGY=143.050 eV AI 400 u



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